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TABLE OF CONTENTS

MEDICINE—Internal Diseases, Pediatrics, Neurology, Diagnostic Methods, Etc.

The Significance of the Signs and Symptoms of Heart Disease. Philip S. Roy, Washington, D. C..... 289

A Diagnosis of Tuberculosis. Henry Boswell, Sanatorium, Miss. 292

Food Conditions and Nutritional Diseases in Europe, with Some Remarks on the Etiology of Pellagra. Seale Harris, Birmingham, Ala..... 294

AUTHORS' ABSTRACTS: Immunization Against Measles, D. L. Richardson and Hilary Connor, Providence, R. I. Blood Pressure in Tuberculosis, W. O. Wilkes, Waco, Tex. Influenza Pneumonia Treated by Blood Transfusion, F. B. Bogardus, Eureka, Mont..... 305

TROPICAL DISEASES AND PUBLIC HEALTH

Studies on Malaria Control V. the Importance of Disinfecting All Cases Treated as a Factor in Malaria Control in a Locality of Great Prevalence. C. C. Bass, New Orleans, La. 306

Report of a State Health Officer. S. W. Welch, Montgomery, Ala..... 310

Annual Message of the President. I. L. Watkins, Montgomery, Ala..... 313

AUTHORS' ABSTRACTS: Milk-borne (?) Epidemic of Septic Sore Throat, D. M. Lewis, New Haven, Conn..... 318

Concluded on next page

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TABLE OF CONTENTS—Concluded

SURGERY—War, Railway, Industrial, Gynecological, Obstetrical and Urological

Surgical Treatment of Tic Douloureux. J. Shelton Horsley, Richmond, Va. 319

Abdominal Surgery in Civil and Military Hospitals. George W. Crile, Cleveland, Ohio 323

Peripheral Nerve Injuries. W. L. Powell, Roanoke, Va. 329

AUTHORS' ABSTRACTS: A Theory on the Etiology of the Toxemia of Pregnancy with or without Convulsions, John E. Talbot, Worcester, Mass. Further Observations on Sex Gland Implantation, G. Frank Lydston, Chicago, Ill. 332

EYE, EAR, NOSE AND THROAT

Bronchoscopic Side-Lights on Bronchoscopic Cases. J. W. Jervey, Greenville, S. C. 333

The Standardization of Tonsillectomy. Frank Dyer Sanger, Baltimore, Md. 336

Mastoiditis without Involvement of Middle Ear: Complicated by Malaria. Louis N. West, Raleigh, N. C. 339

AUTHORS' ABSTRACTS: The Transmission of Infection Through the Eye, Kenneth F. Maxcy, Fort Sill, Okla. 339

EDITORIALS 340

The Passing of "Ptomaine Poisoning" and "Acute Indigestion"

Ambidexterity

The Alabama Public Health System

CORRESPONDENCE 343

BOOK REVIEWS 343

SOUTHERN MEDICAL NEWS 344

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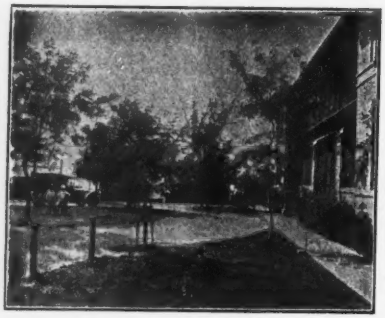

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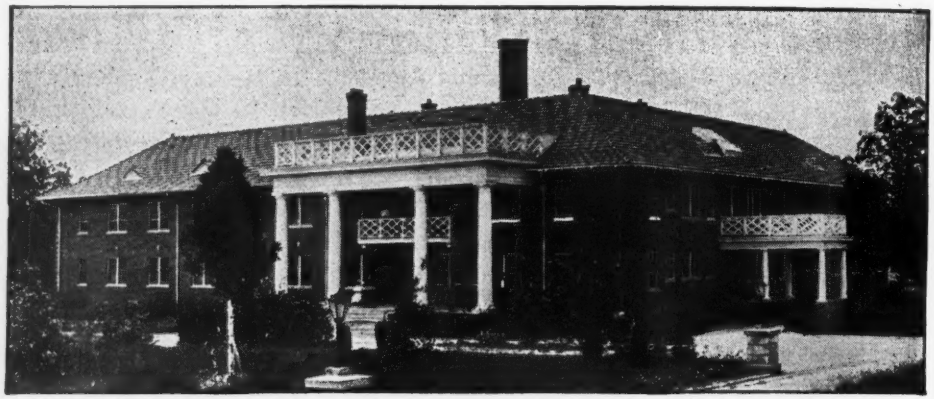

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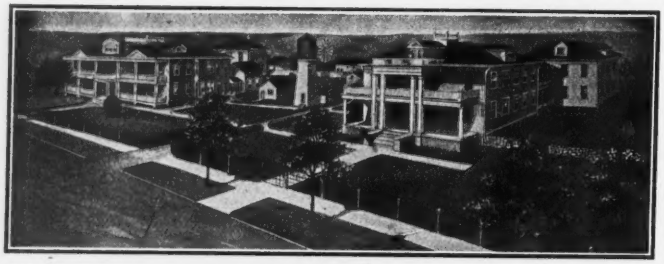

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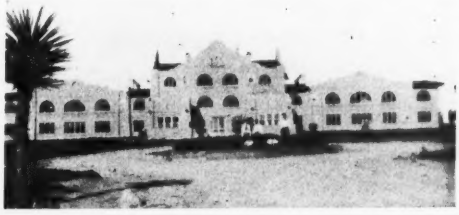

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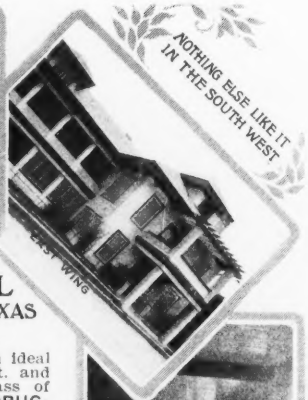

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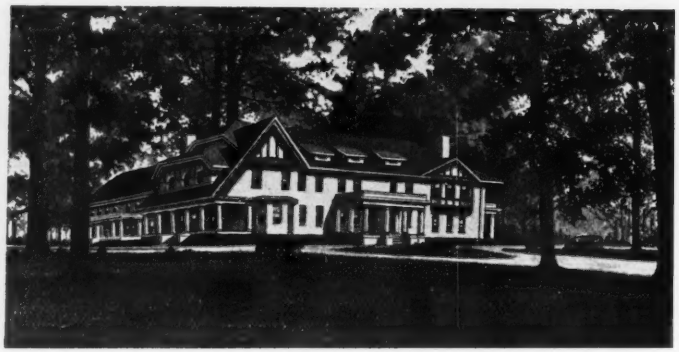

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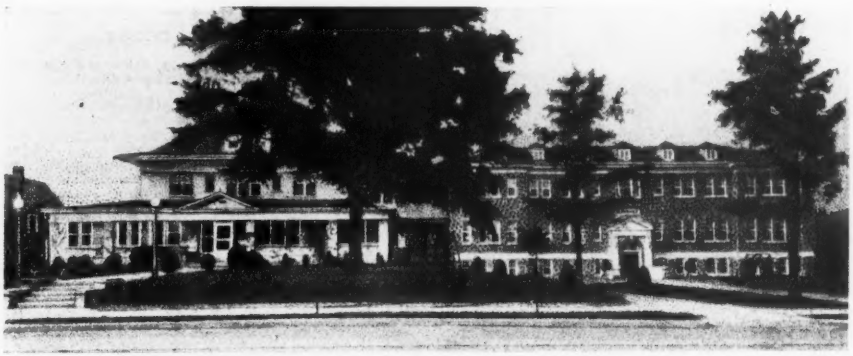

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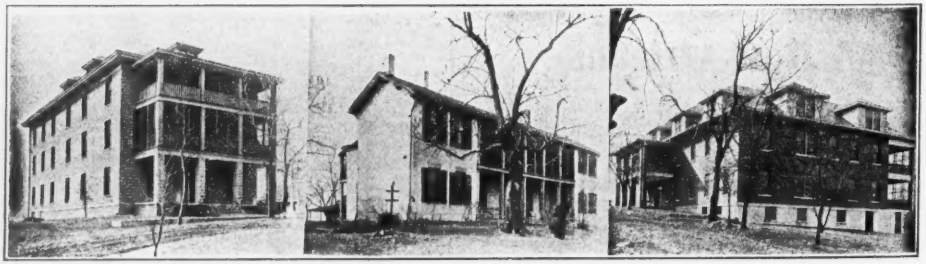

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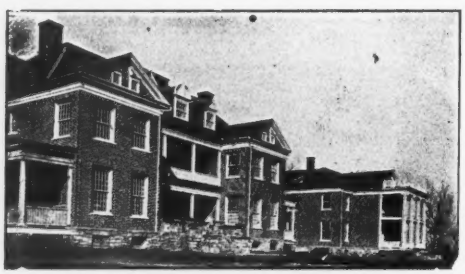

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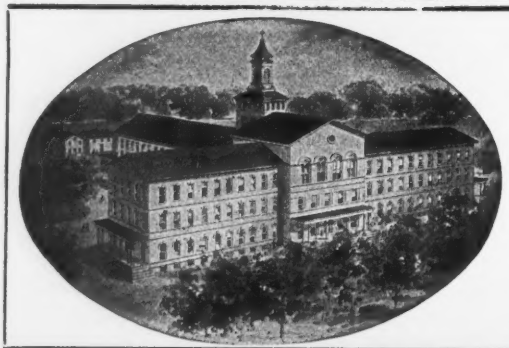

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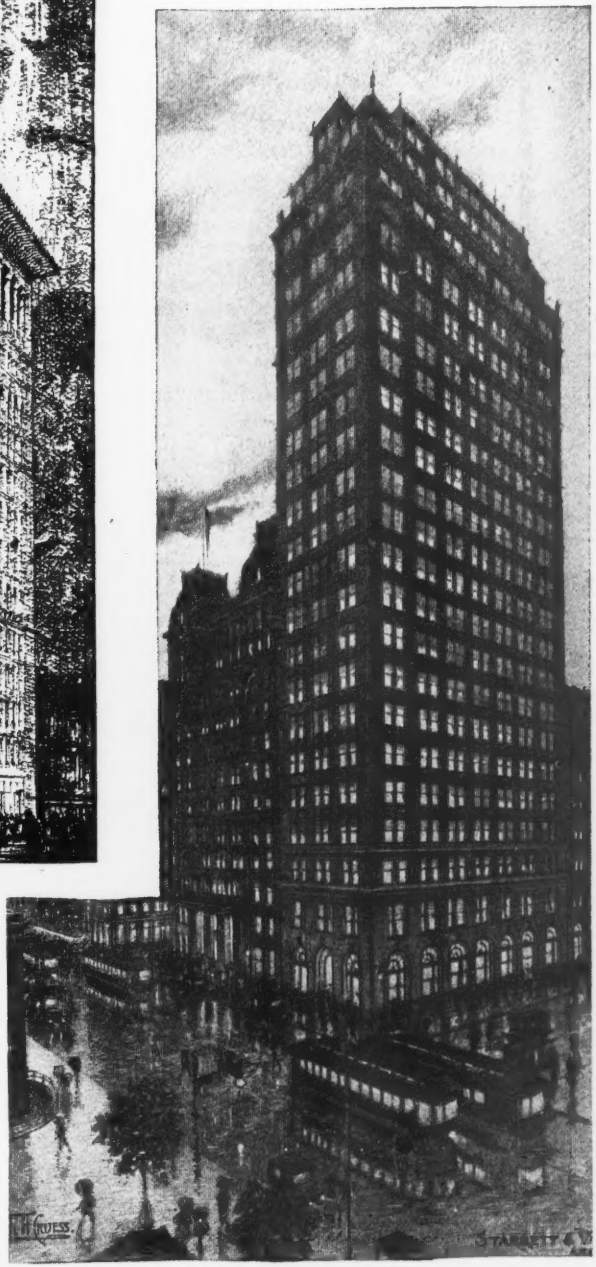

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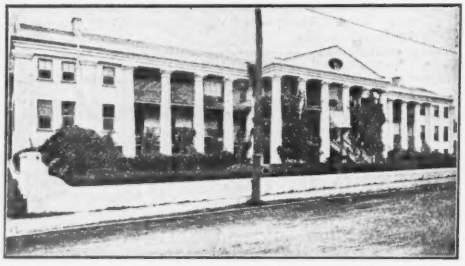

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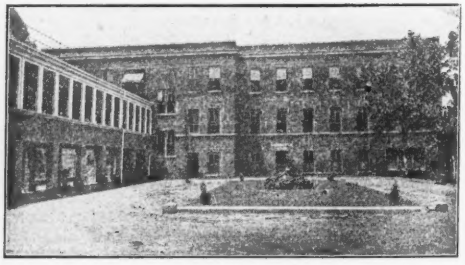

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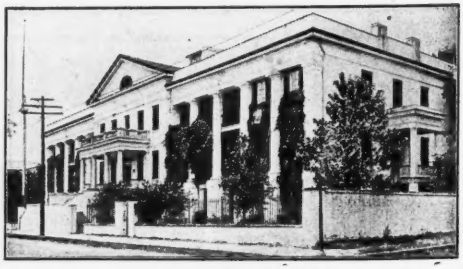

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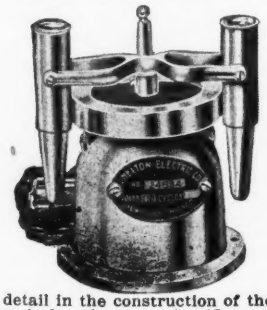

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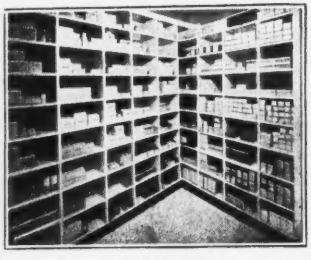

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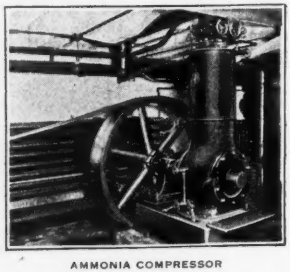

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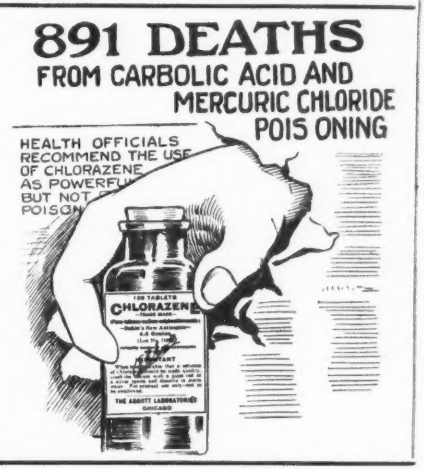

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INTERNAL DISEASES, PEDIATRICS, NEUROLOGY, DIAGNOSTIC METHODS, ETC.

THE SIGNIFICANCE OF THE SIGNS AND SYMPTOMS OF HEART DISEASE*

BY PHILIP S. ROY, M.D.,
Washington, D. C.

MURMURS

The great importance that has been given the heart murmur in the prognosis of heart disease has been due to its occurrence in hospital wards with an attendant failure of the heart muscle. These are really terminal heart cases, the seriousness of such cases depending upon the failing heart muscle and not upon the valvular condition. Mackenzie says Graham Steele startled him more than twenty-five years ago by stating that "No one dies from mitral regurgitation."

Of course we must give great weight to heart murmurs, because the heart muscle may have been injured by the same infection that injured the valves. Whether the murmur denotes injury to the valve is often difficult to determine. A murmur rough in character with a musical quality and having a wide range is usually due to a damaged valve, but organic murmurs may be soft and blowing in character resembling accidental murmurs. Therefore, we must look for other symptoms to determine the significance of murmurs.

It is in childhood and early life that we can best study the heart, because cardiac disease may be caused by various factors in adult life which do not occur in childhood. Degenerated arteries, chronic renal disease, alcohol and syphilis play important parts in determining the heart condition of the adult, but are of comparatively little importance in childhood.

The systolic murmur at the apex, in childhood and early adult life, has been the cause of much alarm to the physician, who has often placed these cases in the invalid class. These murmurs are usually accidental and should never be considered organic unless there is a history of infection, with the heart increased in size and unable to do its work under exercise. This murmur is frequently caused by general debility, with or without anemia, the heart muscle suffering the same debility as the rest of the body. An explanation of this murmur under these conditions is given by Mackenzie and is most reasonable. Mackenzie believes it is due to a loss of tonicity in the heart muscle and especially a weakness in the papillary muscles. The result is that the valves do not properly close and a regurgitant murmur is heard. Here is a myocardial weakness attended with general muscular weakness which is entirely relieved by remedies that will improve the general conditions.

Another common murmur in childhood that should give no alarm is the pulmonary systolic,heard in the pulmonary area between the second and third costal cartilages on the left side. Sutherland considers this murmur in early life physiological. The pulmonary systolic murmur of pulmonary stenosis presents a dilated right ventricle, while the functional mur-

*Prepared for Section on Medicine, Southern Medical Association, Twelfth Annual Meeting, Asheville, N. C., Nov. 11-14, 1918, postponed one year on account of the influenza epidemic.

mur presents no change in the ventricle. An accidental or functional aortic systolic murmur in young persons is also common.

A harmless murmur, we should keep in mind, is the cardio-pulmonary, due to friction between the heart and lungs, shown by its variations during respiratory movements. It disappears entirely when the breath is held.

We must remember that very often we find in children, after exertion, murmurs in the mitral and tricuspid areas, disappearing after rest. In children we see the most complete recovery take place after rheumatic and other infections, due to the fact that the heart has not reached its proper size, and during its development may entirely adjust itself. There is one exception to this, and that is mitral stenosis. The fixation of the mitral segments limits the development of the mitral opening necessary to meet the increased demands of the circulation. The reparative powers of the heart can not be brought into play, and growth is limited to hypertrophy of the left auricle and the right ventricle. In all cases of doubt, when mitral stenosis is suspected, look carefully for dilation of the left auricle in the third left interspace. This is a suggestion that has come to us from several recent writers, but it seems to me there is great danger that the average observer mistake the dilation of the left auricle in this region for dilation of the left side of the right ventricle. Wilson, of Birmingham, England, believes that in dilation of the left auricle we should look for dulness in the left interscapular region with clearly audible heart sounds, whereas in normal conditions they are usually not heard in this region.

I know of no recent work that has given us greater illumination on the subject of the heart in early life than that written by Sutherland. Its pages should be as familiar to us as those of Mackenzie.

Cabot says no diagnosis is satisfactory which rests on the evidence of murmurs; and this I wish to emphasize. We must have other evidences of the damaged heart before we can give an intelligent prognosis, after finding one or more murmurs in the heart. There are two murmurs that usually have grave significance. One is the aortic regurgitant murmur, which, if we exclude rheumatic infections, is in the majority of cases due to syphilis. The other is the true presystolic murmur denoting mitral stenosis, a condition which is found in such a large per cent. of cases of fibrillation of the auricle.

IRREGULARITIES

No irregularity of the heart has given more uneasiness to the physician than sinus arhythmia which occurs in childhood and early adult life. This is a vagal irregularity. The heart muscle is in no way affected. I have known physicians to give the gravest prognosis in cases of sinus arhythmia. Mackenzie says when one is puzzled as to the nature of an irregularity in the young, the vagal character can be determined by noting the changes in the beat during respiration and when holding the breath. There is a definite relation between this irregularity and respiration, the beat being more rapid during inspiration and slower during expiration. It is often necessary to have the person breathe deeply to show this. When the breath is held the irregularity disappears. As in other irregularities, graphic records make the diagnosis more definite.

Another irregularity that, in Mackenzie's opinion, does not of itself indicate a damaged myocardium, is the extra-systole. Thomas Lewis says we should always be careful in our prognosis in extrasystole, and I do not believe it is possible for us always to determine whether it is or is not the forerunner of serious organic heart disease. By graphic records we can more clearly demonstrate this irregularity, but at the bedside it is detected by a beat followed quickly by a second beat, and then a longer pause than the physiological interval between heart beats. When the second beat is not strong enough to raise the aortic valve we have a dropped beat or intermittent pulse. Extra-systole frequently occurs in fibrillation of the auricle, but should not be confused with it. Fibrillation of the auricle is a perpetual irregularity of the heart. In auricular fibrillation the pulse is 100 or more beats to the minute; in extra-systole the beat is not rapid and is perfectly regular for half a minute or more. With

exercise fibrillation becomes more irregular, while the extra-systole often disappears.

Keeping in mind the two irregularities I have mentioned will greatly aid us in differentiating the most serious irregularities—paroxysmal tachycardia, fibrillation of the auricle, auricular flutter, heart-block and pulsus alternans. All of these indicate a damaged myocardium, although we may see persons who for years have had attacks of paroxysmal tachycardia, these attacks lasting for a few hours, when the heart returns to normal without any symptom of failing heart-muscle. In paroxysmal tachycardia the pulse doubles or trebles itself, and then suddenly returns to its normal beat.

PAIN

Pain occurring in the region of the heart should always be given the greatest consideration even though it may never have radiated down one or both arms, and has only been of slight severity. Such attacks are often forerunners of angina pectoris, and we should immediately test the condition of the heart muscle. If we question these patients we will generally learn that with exertion they have had some breathlessness. Most of the persons who come to us with mild attacks of angina come for what they term "indigestion."

HEART FAILURE

I wish to call attention to one of the most important signs of heart failure, both in acute infections and in chronic heart conditions. It is the dilation of the left side of the right ventricle, and particularly of its thinnest portion, the conus arteriosus. The right ventricle is far the most easily examined. Occupying the front surface of the heart, it can be mapped out by percussion, and a dilated conus arteriosus can be seen beating in the second and third interspaces on the left side, at times, as far out as the axillary line. Dilation of the right ventricle will draw the apex upward into the fourth interspace, and if we depend upon the apex beat for determining enlargement of the heart, our diagnosis will be very erroneous. I have seen dilation of the right ventricle in rheumatic infection of the heart; and it is a most common condition in the failing heart of pneumonia. Breathlessness is a constant symptom in failing heart, but we must not overlook the fact that it occurs in other conditions. Tumors within the thoracic cavity, pressing upon the heart and the great vessels, cause breathlessness. Only recently I examined a man for what was supposed to be a serious heart condition and found physical signs in the chest that convinced me it was not the heart causing the breathlessness. In this case it proved to be a large tumor, the character of which could not be determined, but the shortness of breath has disappeared upon treatment of the tumor by x-ray. Tuberculosis, early in the disease, causes shortness of breath. Fluid in the pleural cavity, emphysema, enlarged liver, dilated stomach, anemia and asthma are a few of the more common conditions that cause breathlessness.

Our prognosis in heart disease must be based upon the functioning power of the heart muscle. The first test should be to determine whether the person can perform his usual duties without causing shortness of breath and rapid pulse. Another simple test is the staircase test. Count the pulse and respiration, then have the person walk rapidly up ten steps. Under ordinary circumstances the pulse rate will not advance more than fifteen to twenty beats per minute, while if the myocardium is involved, the rate will increase thirty or more beats per minute. The blood pressure in the normal heart will be increased about 8 mm. In the damaged heart, it is often not increased at all, and if it is slightly increased, the rise will be followed by a fall below normal in a few minutes.

I know a great deal of importance is now attached to the carbon dioxid tension in the lung in determining heart functioning. It has its usefulness; but before this test is of value, any careful observer can find that the person's heart muscle is losing its efficiency. Never mistake displacement of the heart for enlargement of the organ.

Every function of the body must be carefully studied before we can give the proper significance to any symptom of heart disease.

A DIAGNOSIS OF TUBERCULOSIS*

By Henry Boswell, M.D.,
Superintendent and Director Bureau of Tuberculosis, Mississippi State Board of Health,
Sanatorium, Miss.

In writing a paper for this Association on a subject so big and so difficult, I shall try to confine myself to a brief discussion of the things I think will be interesting to the general practitioner and certainly not take up your time with the ultra-scientific and the methods of examination possible only in the hands of the specialist.

My whole effort in this short discussion will be to bring out those things and methods which will help to make a fairly early diagnosis, ideally in its incipiency. In practical work, we encounter it in the moderately advanced stage; as the average physician does not see the patient until after the incipient stage has been passed, for the reason that the patient is not sick; and in the rush of the average physician's life, he would in all probability overlook such findings as are common to the incipient stage.

A diagnosis is much like the verdict of a jury. It should be made only when all the evidence has been submitted and the facts arrived at by carefully sifting the testimony for clearing it of the preconceived ideas of the physician, which would tend to becloud his thoughts and mask his best judgment, and also clarify the exaggerations and reluctant admissions of the patient.

For such a diagnosis I submit for your consideration the following outlines of work:

A. The almost universal prevalence of the disease.

B. A careful history taking.

C. Careful physical examinations with biologic test.

D. Laboratory, including the x-ray.

A. The physicians should keep in mind the autopsy findings of active or latent tuberculosis, which vary from 20 to 98 % in the hands of various investigators. Should they do so, many cases would be diagnosed which are overlooked, and which go to build up the patent medicine industry and finally our mortality record.

B. Careful history taking can not be overestimated in its value, taking up especially the following:

(1) Family history, keeping in mind the fact that the patient will in all probability keep back information which would be of great value. The causes of deaths, if any have occurred, should be considered even among the aunts, uncles and first cousins, as there is usually a rather intimate social relationship existing between these members and relatives.

(2) There should be a history of personal associations and place of living—whether a friend or school mate has been a victim, and especially whether a patient has lived in a house previously occupied by a victim. All questioning should be done with skill and tact and the history should be complete back to childhood.

3. It is well to take a history of previous diseases or ill health, especially to such diseases as measles, influenza, whooping cough, pneumonia, typhoid fever, malaria and hookworm disease, named, perhaps, in order of their importance.

(4) A history of dissipations, overwork and worry is important.

(5) One should record a history of the present illness; just when the patient first noticed the abnormal, and of what it consisted. Usually by skilful questioning it is found that the patient has been gradually going down for months and often recurring attacks of malaria over each spring and fall. There are insomnia, peculiar that it is usually one night in many, a nervous, irritable disposition, loss of appetite, some loss of weight, strength, perhaps, and a slight cough may be present, but this is the least constant of anything in the history of the average early case. Slight expectoration, especially on clearing the throat after meals and exercise, a history of pains and heaviness in the chest, and a slight shortness of breath. Hemoptysis is present in many early cases. Often the first thing given in the history—and if I offer nothing else, please allow this—if a given patient suggests that he has been bringing up blood, make a pro-

*Read before the Mississippi State Medical Association, Fifty-second Annual Session, Hattiesburg, Miss., May 13-14, 1919.

visional diagnosis and keep it until you are sure that it is something else. So many patients have lost their lives because the doctor accepted the patient's suggestion that it is "from my throat or nose."

In getting the history do not overlook what the patient often refers to as rheumatism, a tired or aching feeling in the shoulders, and especially the back of the neck.

C. Physical examination should be made with the patient's chest stripped to the skin, and if the chest is hairy, it should either be shaved or oiled so that you will not be bothered by the hairs giving you rales when under the edge of your stethoscope. The physical examination should be done systematically and a record made of the findings in each step.

(1) Inspection should be made of the condition of the chest, its shape, etc., noting especially its irregularities, pulsations, expansion, etc., both on normal and forced respiration. It is especially important that you take your time in each step.

(2) Palpation, with a little training, will elicit more than almost anything else. Chest resistance, if there is an acute inflammation beneath a given part of the chest, is found rigid, with an increase in all muscle reflexes, and especially is this true of the pectorals, trapezius and scaleni muscles. There is an increase or decrease in tactile fremitus according to the pathology beneath.

(3) The percussion gives little information in the early stages, yet to the specialist who devotes his entire time to chest work, and who can differentiate musical tones well, it will be found that over an early lesion there is either a hypo-resonance or a hyper-resonance over the good lung which is taking up the work of the retarded one.

4. No doubt more cases of tuberculosis can be diagnosed by proper auscultation than by any other one thing, but it is by no means infallible and should not be, and is not, relied upon wholly by any one for the diagnosis of every case.

First, it should be done carefully over a chest already prepared as above stated and with a good stethoscope. It is perhaps wise for the physician to use a stethoscope such as he has been trained with, but to those who have not been trained in the use of some other, I am bold enough to suggest the one free of all joints with preferably a small aluminum bell and large ear tips, the spring adjusted so as to give absolute comfort, and when the bell is closed by the hands all ordinary sounds should be cut out. I have found any other instrument wholly undesirable, especially the ones covering large areas and with a diaphragm which comes in contact with either the skin or hair. The use of the naked ear for chest work is inexcusably unscientific and unreasonably impractical. Likewise is the examination of the chest through the clothing. To get the best results from the use of the stethoscope, it is necessary to appreciate the various more or less musical sounds and to interpret the ones heard. To do this best, one should go over a normal chest at least once a week.

Things of importance on auscultation are

(1) Rales.
(2) Prolonged expiratory murmur.
(3) Increased whispered voice.

Of these the last two are of little importance to the general practitioner.

Rales, localized and persistent over any part of the upper lungs, mean tuberculosis either active or latent. They are heard most often over the apices, then over the middle of the lungs posteriorly and along the anterior margin. Lawson Brown states that in the base of the lungs they are more often due to something other than tuberculosis. Rales are sometimes heard on deep breathing exercise alone, but more often not heard unless the patient is put through the pace of the prolonged expiration—cough—quick inspiration; and so important is this that I do not hesitate to say that no chest examination for tuberculosis is complete without the use of this method. The patient should be instructed at all times to breathe through the mouth, as often cavities are suspected in the lungs when in reality the sound is produced by the rushing of the air around some deformity in the nose.

Increased voice sound is heard over consolidated tissue and cavities, and normally so, over the right apex, and is decreased over thickened plura and fibroid

lung. Prolonged expiratory murmur is very significant, especially over any of the lung other than the right apex, where it is present normally. Temperature, persistently low or high, is very suggestive, and especially when you can rule out focal infection and hyper-thyroidism. All mouth temperatures are inaccurate at best and should never be taken for less than four minutes. Fast pulse is a very early sign. Persistently low blood pressure is more often found in tuberculosis than in any other disease.

The biologic tests are the Von Pirquet, Moros, Calmette and the subcutaneous injection of tuberculin. Von Pirquet and Moros tests can be used very successfully by the general practitioner and are of great value. Calmette's ophthalmic reaction is dangerous in general practice and I mention it only in condemnation. The subcutaneous injection of Koch's old tuberculin is the most reliable of the biologic tests, but should be used only by the specialist, and under the added protection of a well-trained and reliable nurse.

D. Every chest examination should be followed by a fluoroscopic examination or x-ray picture. As in many cases, they will bring out hidden infections that can not be found in any other way; particularly is this true of the mediastinal and bronchial glands. It is quite true that few people can read the plates so as to differentiate active and latent lesions, but with the clinical symptoms present, as is seen in those who seek treatment at your hands, it can well be said "the patient reads his own picture."

The microscope is valuable in only about 35 % of early cases and is absolutely valueless in 65 % of early cases, as it applies to the examination of sputum. All other microscopical tests are too young for us to praise or condemn.

I would like to add this one thought: Negative microscopical examinations are absolutely valueless regardless of their number, as many cases die without ever showing the presence of the bacilli. Likewise a positive finding does not always mean active tuberculosis, as we have many people enjoying perfect health who discharge bacilli by the millions.

CONCLUSIONS

With the fact of almost universal prevalence before us, a history of prolonged exposure, with previous disease, overwork or dissipation to drag down the resistance, a history of malaise, insomnia, nervous irritability, aching, chest pain, neck pain, slight cough, a physical examination showing chest changes, especially rales, prolonged expiratory murmur, increased voice sounds, variable temperature, increased pulse rate and low blood pressure, one is justified in making a diagnosis of pulmonary tuberculosis.

FOOD CONDITIONS AND NUTRITIONAL DISEASES IN EUROPE, WITH SOME REMARKS ON THE ETIOLOGY OF PELLAGRA*

By Seale Harris, M.D.,
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The history that has been made since we gathered together a year ago has been wonderful. At our meeting last year we were talking war; and the doctors of Alabama showed their patriotism by the sacrifices they made to serve their country. Today we are celebrating our victory, and are experiencing the joys of being at home again.

Certainly there is a vast difference in my own feelings today and a year ago. At the Birmingham meeting last year I had orders in my pocket commanding me to proceed to a port of embarkation on May 1 to sail for France. At that time none of us dreamed that the Germans could be beaten before the end of 1919, and most of us believed that it would take several years longer to conquer a nation that had been preparing for war for half a century. But the seemingly impossible was accomplished by the United States sending to France an army of 2,000,000 men, the bravest and the fittest — or "fightin'est"—soldiers that ever fought. It was the balance of power that our country

*Address at the "Victory Meeting" of the Medical Association of the State of Alabama. Mobile, April 17, 1919.

Approved for publication by Surgeon-General.

carried into the conflict in war-worn France that brought victory for Allied arms.

Next to the soldiers who faced German cannon and who stood up and fought when hidden machine guns were pouring death into their ranks, the medical profession of the United States made the greatest sacrifices and performed the most valuable service rendered by this country in winning the war. The doctors of Alabama did their part nobly. It is, therefore, fitting that on this occasion the Medical Association of the State of Alabama should celebrate with a "Victory Meeting."

This is also the occasion for a personal celebration for me, because it is the quarter of a century mark in my membership in this Association. I have not missed a meeting of this organization since I began practicing medicine in 1894; and I have never attended a meeting of this Association that I did not learn something of value in the practice of my profession. I always go home from medical meetings feeling that my time has been well spent. Indeed, the medical society "habit" is the most delightful and the most profitable form of recreation for doctors, and I commend it to those who wish to keep abreast with the science and practice of medicine and surgery.

AMERICAN SOLDIERS WELL FED

In discussing "Food Conditions and Nutritional Diseases in Europe" it may be well to mention, first, that the American Armies, both in the United States and in Europe, throughout our participation in the World War, have been the best fed troops in the history of warfare. It is true that our army rations have contained an excess of proteins (meats, beans, etc.); but otherwise the soldiers' diet has been well balanced, with plenty of good, wholesome food for every one.

The selection, purchase, and transportation of food for an army of more than 2,000,000 in a foreign country, 3,000 miles from home, and the preparation of this food under conditions in which our troops fought in France, is surely among the great achievements of the war. Napoleon is credited with saying that "an army moves on its stomach;" and the fact that the American troops were so well fed may account partly for the agility, and the eagerness, with which they fought, always moving at a rapid pace toward Germany.

I had the privilege several times of eating with our soldiers at the "front," and in various other places in France; and they were always well supplied with food, except on the occasions when sometimes in the midst of battles food had to be carried to them at night. I also had the opportunity of observing the meals that were served the French and British soldiers on several occasions. They were not so well supplied with food, nor was it so well prepared as for our men.

A recent report of the War Department shows that American soldiers gained, on an average, 12 pounds during their service in the Army. Contrast this with the fact that in the Spanish-American War our soldiers lost on an average of 22 pounds each, and the difference is startling. It should be said, however, that the average loss of weight in the Spanish-American War was not all due to lack of the proper food; because nearly 20 per cent. of American soldiers in that war had typhoid fever and were discharged from service before they had regained their weight. The difference of 32 pounds in the average weight of our soldiers in the Spanish-American War and the World War, from the time they entered until they were discharged, is a great tribute to the improvement in the efficiency of the Quartermaster's and Medical Departments of the United States Army.

FOOD INFECTION AFTER GERMAN RETREATS

The care with which our food was protected from infection also speaks well for American efficiency. During the eight months of my service in the Surgeon-General's Office when in charge of the Section on Gastroenterology, in the Division of Internal Medicine, I inspected the work in digestive diseases in a number of base hospitals and had reports from the gastroenterologists in all of them—and not one case of food poisoning, nor food infection, was reported. I did not learn of any cases of food infection in France, except during the "drives" when sanitary conditions

were found to be particularly bad in the territory that had been occupied by the Germans. After the German defeat and retreat in the Chateau Thierry region they are said to have left things in a frightful condition.

Colonel Grissinger, in discussing "Feces Disposal and Fly Prevention in a Division,"[1] at the September meeting of the Research Society in Paris, gave a graphic account of the horrible stench left by the Germans in their retreat. He said that they left horses and men dead and putrefying on the battle fields in the hot sun for days; and they seemingly tried to infect everything that they could not take with them. They polluted the wells and the streams; and defecated upon the floors, tables, and chairs, and even in bureau drawers, and everywhere they thought they could ruin furniture and houses, so that nothing could be used by the victorious troops of the Allies. Our soldiers said that it was a great deal easier to "clean up" the Germans in fighting than it was to clean up after them when they had been whipped. As a result of the filthy habits of the Germans, flies were swarming everywhere, and it was impossible to keep them away from food.

From various enemy reports which were secured by the Allies, and the visible manifestations of dysentery which the Germans left behind them in their retreat, their soldiers must have suffered more from dysentery than did those of the Allied armies. It is surely a fact that until the end of summer wherever our armies chased the Germans, despite every precaution that rapidly advancing troops could make, they developed epidemics of dysentery. These epidemics were of the bacillary type, the Flexner-Shiga bacilli being the principal offenders, 'though often there were mixed infections.

Zinsser,[2] at the September meeting of the Research Society, reported that among the thousands of cases of dysentery among American soldiers, the paratyphoid bacilli had been found in a few cases. He had also observed in the feces of a number of cases a new bacillus closely resembling the typhoid group. Siler,[3] at the same meeting, said that in a number of cases of dysentery among American soldiers in France the entameba histolytica had been found. There were thousands of cases of nausea, vomiting, and diarrhea, usually ascribed to food infection, or to contaminated water, after the Chateau Thierry drive. They were usually mild and subsided after a few days rest with restricted diet. There were, however, many cases of severe dysentery.

FOOD FOR FIGHTING EFFICIENCY

It is not entirely irrelevant to say that the American troops were the finest looking soldiers in Europe, because the reason that they were such perfect specimens of physical health was partly due to the fact that they were always supplied with good, wholesome food. The greatest thrill that I have ever had—and one that I felt many times—was to see our soldiers marching in France and Germany. I saw them marching to the front, returning to rest camp after battles, and in various parades; and it was always with the same thrill and pride that I watched them.

There is also no question that one of the reasons why our soldiers fought so well, and were so efficient in every other way, was that they were so well nourished. The same was true of our Allied troops. While they were not so well fed as our soldiers, they had much more food than the German and Austrian troops. On one occasian, last October in Rheims, I saw 4,000 German soldiers the day after they were captured by the Americans and French in fighting around Grand Pre. They showed unmistakable evidences of being undernourished. Later in Germany I was told by a medical officer in the German Army that it was a fact that for the last few months of the war, even 'though the German soldiers were better fed than the civil population, they did not have proper food to keep them in good fighting condition.

FOOD CONDITIONS IN FRANCE IN 1918-1919

Food conditions among the civil population of France in 1918 were serious, 'though not so bad as I expected to find them. When I arrived there in May it was not possible, at least in hotels, to get milk, butter or other fats, and sugar. Bread, which was heavy and unpalatable,

could be obtained, but not in sufficient quantity. Apparently there was plenty of meat, but all the fat was cut off before it was sold, and it was very expensive, so that the poor could not buy it. The delicious French rolls, cakes, pastries and other gastronomic delights which are delightful memories to those who had been to France before the war, were not to be had at any price. France was surely on war rations in 1918.

My personal experience illustrates the food situation in France last year. After having lived for three months in what is considered one of the best pensions (boarding houses) in Paris, I weighed myself and found that I had lost ten pounds. I mentioned this fact at the table, which seated twenty-five or more, where there were a number of American, French, and Italian officers, and found that all of those who had been in France for some time had lost flesh in amounts ranging from ten to forty pounds. We were getting the nicest anti-fat diet imaginable, and it was typical of what was served everywhere in France. All our food was nicely prepared and none of us realized that we were not getting enough to eat until we found that we were losing flesh.

The French breakfast ordinarily consists of rolls, butter, and coffee or cocoa; but we had only two thin slices of war bread, no butter, no milk nor cream for our coffee or cocoa, and it was sweetened with saccharin. We were, therefore, consuming less than 300 food calories for breakfast.

For luncheon we had plenty of vegetables, potatoes, rice, meats (particularly beef, veal, and fish) and fruit, oranges, figs, or grapes. Dinner was the same as luncheon except the addition of thin soup. We had no milk, butter, sugar, nor desserts, except fruits—usually grapes. I estimated that each of us was getting about 2,000 calories of food a day, one-fourth of which was protein—not a well-balanced diet, or one on which health and efficiency could be maintained for many months. I, therefore, moved to the Officers' Club (Hotel du Palais), in charge of the American Y. M. C. A., which provided us with everything that the French markets afforded, and in addition butter, sugar, canned milk, and plenty of bread. I soon regained the flesh that I had lost and felt more like performing the work that I had to do.

NUTRITIONAL DISEASES IN FRANCE

There can be no question that for two or three years the whole French population has been undernourished, particularly the poor, and as a result the general death rate, especially among children, has increased considerably. Tuberculosis has increased enormously among the civil population of France. The same is true of the anemias. Scurvy, particularly the infantile variety, which was said to be rare in France prior to the war, is now a frequent condition. Epidemics of Vincent's angina, dysentery, and the infections of childhood are said to have been worse than ever known in France. I could find no one in Northern France who had seen pellagra, but I did not visit the Southern districts, where it formerly prevailed. It should be mentioned that the American Red Cross has saved thousands of lives and has prevented many more thousands of cases of illness by distributing food and in establishing free clinics all over France.

The shortage of fats, sugar, and wheat products in France lasted up to several months after the signing of the armistice. Conditions were improving when I left France in February, but food was still so expensive that the French complained that they could not buy it. Incidentally, the French blame the Americans for raising the price of food and everything else that is sold in France.

FOOD CONDITIONS IN ENGLAND

I was in England in June of last year, and apparently there was a more serious food shortage there than in France; and there is no doubt that the British suffered greatly because of their inability to get sufficient fats, meats, and sugars. While there was apparently plenty of meat everywhere in France, it could not be obtained except on cards, and then only in small quantities, in the hotels and cafes in London. Fish, however, was available. I was in England for only a week and my work was such that I had but little op-

portunity to investigate food conditions and nutritional diseases, but I feel convinced that the British suffered more than the French from the shortage of food.

THE ITALIAN WAR DIET

Food conditions in Italy were worse than in either France or England. I spent three weeks there in January of this year, and from the information that was obtained from Red Cross workers, and from many Italians, I am convinced that there was a very serious shortage of meat and wheat in Italy in 1917 and 1918. Indeed, I was informed that the disaffection in the Italian Army, which resulted in the disastrous retreat in 1917, was largely due to the fact that the Italian soldiers, and the civil population of Italy to a greater extent, were not getting enough food. I was also informed that the American Red Cross had much to do with keeping Italy in the war by furnishing her people with food during the great crisis through which that country passed in 1917.

The meat shortage in Italy is said to have been most serious. Even two months after the signing of the armistice meat could not be had at many of the hotels and it was so expensive that the poor could get but little. The fact that the Italian Government prohibited the manufacture of macaroni and spaghetti is enough proof of the scarcity ot wheat. The only macaroni I saw in Italy was in the American Hospital at Vicenza. This hospital, which received wheat from America, had a macaroni machine which was said to have been worked overtime; and partly for this reason the sick and wounded Italian soldiers—the "macaronis," as the American "doughboys" called them—wanted to be treated by the American surgeons in Italy.

PELLAGRA IN ITALY

Since the Italians could not get meat and wheat products, their diet consisted of cornmeal (polenta), rice (risotti), potatoes, and other vegetables. They also had beet sugar. They had no milk, and eggs were so scarce and so expensive that only the rich could get them. The Italians for several years have lived on a very unbalanced diet, markedly deficient in proteins, excessive in carbohydrates, and the vitamins contained in milk were not obtainable,—much the same food conditions that exist among the poor in the rural districts of the South, where pellagra has seemed to be spreading during the past ten years.

Despite this unbalanced diet, pellagra has decreased very markedly in Italy since the war began. All the Italians with whom I discussed the subject said that pellagra has diminished to such an extent in the last twenty years that it is now a rare disease in that country. Just why this decrease has occurred, no one attempted to explain. All observers agreed that tuberculosis, scurvy, and other diseases in which malnutrition is an important factor have increased very greatly since the war began. The general death rate, and that from the infectious diseases of childhood, have also been excessive, which are accounted for by the low diet which the population of Italy have been forced to live upon.

The doctors in Rome said that there was no pellagra there, but that there was plenty of it in Northern Italy. At Padua, near Venice, where the headquarters of the Italian Army is located, I was informed that there was no pellagra in that part of the country. At Vicenza, near Verona, the medical officers, largely from New Orleans and Asheville, in the American Hospital, through which many thousand sick Italians have passed, said that they had not seen anything that even remotely resembled pellagra, and that they had not heard the disease mentioned by the Italians. After chasing pellagra all over Italy it seemed that it was like the "snakes in Ireland," but I did not learn the name of the particular patron saint that is driving pellagra out of Italy.

I went to the office of the Surgeon-General of the Italian Army, hoping to get some statistics on pellagra, but was informed that only a few cases had been reported among the five or six millions of soldiers that had been drafted in Italy. The only statistics that I could get on pellagra in the Italian Army was the statement that among the eighteen-year-old boys who had been called into the service in 1918, only thirty-four had been rejected because of pellagra.

The Vital Statistics Division of the Italian Public Health Service was also visited, hoping to get some data on the prevalence of pellagra, but the physician in charge said that there were no reliable statistics concerning pellagra in Italy. He said that he was quite sure that pellagra had decreased enormously in the past two decades, but that he had no data to prove it. He promised to send me the statistics on pellagra that could be obtained in his office, but up to this time they have not been received.

ITALIAN THEORIES OF THE ETIOLOGY OF PELLAGRA

The Italian physicians with whom I talked were familiar with Goldberger's theory of an unbalanced or deficient diet's being the cause of pellagra, but they do not accept it. They seem very much divided as to the etiological factors which might account for pellagra. Geni's view that pellagra is due to a toxin elaborated by an asprogillum which grows on maize that has not been dried thoroughly, is believed in by some; and there are still those who believe in Lombrosi's theory of its being due to some unknown factor in maize.

Sambon's belief that the simulium reptans is the cause of pellagra is not accepted by many Italians. Alessandrini, brother of the tuberculosis expert by that name, who will be remembered by American medical officers as having attended the Tuberculosis Conference of the Research Society in Paris, has made investigations which convince him that a deficiency of silicon in the diet is the cause of pellagra.[4] Most of the Italians, however, from the best information that I could gather, think that the cause of pellagra is yet to be discovered.

CONDITIONS IN AUSTRIA AND HUNGARY

Food conditions in Southern Austria were much worse than in Italy, but in Trent and Trieste I could find no pellagra. In Goryza, around which the Italians and Austrians fought for two years, the inhabitants said that they had not had meat for months, and they showed many evidences of undernourishment. The death rate, they said, had increased enormously from tuberculosis and children's diseases, but there was no pellagra. In Southern Hungary, at Pola and Fiume in Istria, much the same conditions were found. They had an excess of carbohydrates, particularly beet sugar, and a deficiency of proteins, and the physicians there said they had no pellagra.

STARVING GERMANY

There has been such a difference of opinion regarding food conditions in Germany that it may be well to go a little more into detail in describing the investigations which I made there in February of this year. The fact that those who think that American food should be sold to the Germans have been accused of being too sympathetic, makes it seem advisable for me to state my attitude of mind toward the people of that accursed nation.

I went into Germany "seeing red." I had been in Paris in May, June, and July, 1918, in the darkest days of the war, when it seemed as if nothing could keep the Germans from piercing the "heart of France." Night after night I had heard the air raids of the German Zeppelins and bombing aeroplanes, and day after day, at varying intervals, the explosion of the shells from their big guns. One of them struck a church and killed 90 people while they were worshiping God. I had seen thousands of hungry and homeless old men, on the brink of the grave, mothers with babes at their breasts, and children of all ages who had refugeed to Paris, who were driven from their homes in the spring drive of the Germans in 1918. I had seen hundreds of American soldiers with closed eyes and swollen faces, sick and dying from poisonous gases which the Germans had used contrary to all the laws of nations. I had seen thousands of American and French soldiers, who had been wounded fighting the most treacherous foes that ever gave battle. I had heard British, French, and American medical officers tell of various German atrocities which they had witnessed, and during my nine months' service in France I saw and heard so much of the ruthless warfare of the Germans, I learned to hate them with a fury that I was ashamed to

admit could exist in my heart for any human beings.

On my way to Germany I had gone through the Argonne, where thousands of the finest of America's manhood had been killed in that most dreadful of all the battlefields of France, and had identified the body of my nephew, Captain Charles Dashiel Harris, the finest man of my name that has ever lived, who, two months before, while leading his company in battle, had been killed by the Germans, and had been buried by them in a shell hole. My heart cried out for vengeance for this brave boy's death, and for the thousands of other crimes of the Germans. I, therefore, was not in a sympathetic frame of mind when I went into Germany.

In 1906 I had spent some time in study in Berlin and Vienna, and had made a number of visits to the rural districts in Germany and Austria. I am, therefore, familiar with the German customs in eating, and also with the general appearance of the German people. Before the war the Germans were great gourmands. In fact, the way in which they gorged themselves, the frequency of their meals, and the amount of beer-swilling seen everywhere in Germany and Austria, used to cause the American physicians who were studying in Berlin and Vienna to refer to the Germans and Austrians as "pigs." Incidentally, in my opinion, before the war, the Germans suffered more from the bad effects of overeating than any other people in the world. Conditions are very different today. The corpulent, meat-eating, beer-swilling German is not so much in evidence, and all classes, particularly the children, are suffering from lack of nourishment.

The Germans are large people, with big frames, and most of them are blondes, so that anemia in them would not be recognized by the average person unless he knew the Germans before the war and was accustomed to observe the peculiar pallor that is seen in people who are undernourished. I was so impressed with the anemic appearance of many people in Germany that I began to make inquiries and found that in a number of localities, the names of which are withheld for military reasons, the Germans, as a rule, were getting less than half the amount of the bread, meat and fats needed for normal nutrition—not enough to maintain health nor life for a great length of time.

GERMAN RATIONS

I made a number of inquiries regarding food conditions and found that the rations for an adult for the week ending February 1 consisted of: 100 grams of barley; 100 grams of potato flour; 5 pounds of potatoes (four potatoes average a pound, with half of them rotten, but the people have to accept what is allotted to them by the Government); 2,000 grams of bread; 150 grams of meat on Saturday only (this is equal to about one-quarter of a pound and not more than enough for one meal). I asked how often they ate meat, and they all said "once a week." They are allowed only 50 grams of fats (margarine) in ten days. Eggs can not be obtained at any price, and there is practically no milk. Adults are allowed half a pound of beet sugar per month and children are given half this amount. Children from one to three years are allowed half a litre (1 pint) of milk per day, if there is any, but apparently there is very little—none in many places.

I purposely did not discuss food conditions with any of the office-holders or politicians, but talked to men, women, and children on the streets, in stores, shops, and hotels. I also talked to physicians. From ten years old upward, the German population seemed to know the exact number of grams that they were to get of all kinds of food, and with few exceptions all those with whom I talked showed evidence of lack of nourishment and complained that they were not getting enough to eat.

I went into a number of stores which had quite an imposing display in the windows, but found inside that many of the shelves had nothing on them, or contained empty boxes from which the contents had been sold. Some of the meat shops and grocery stores make displays of food, but it can not be sold except by Government cards, and at such high prices that none but the rich can buy it. With few exceptions, the girls and women with whom I talked in the various stores showed

marked evidences of anemia and said they had lost weight and in amounts ranging from 10 to 45 pounds. Two young girls with whom I talked had gained weight since the war, but they were at a growing age when their height and weight would naturally increase. All classes of people, particularly the women and children, lacked energy and vitality. They seemed very different from the German people whom I knew in 1906.

UNDERNOURISHED CHILDREN

A number of children trudging along to school through the snow, wearing paper sandals in cloth shoes with wooden soles, presented a pitiable spectacle. I asked them what they had had to eat that day, and for the past week. All of them replied: "Soup, potatoes, and a little bread." The soup is made of barley or potato flour, and often contains vegetables, but no meat. Not one of thirty or more children remembered when they had had milk. The Germans seem to have more vegetables than anything else, but many vegetables are now being eaten that never were before. For instance, the sugar beet, which is extremely coarse, is said to be used quite generally; and a tough tuber, the name of which I have forgotten—a cross between a potato and a turnip—was also being eaten.

The bread that is issued to the Germans, by card, is heavy, black, gritty and tasteless. It is made of flour sold by the Government and no one seemed to know just what is its exact composition. It is thought to be barley, potatoes and beet root. None of this flour is sold except to bakers and they can only sell a limited amount of bread to each person, and then only upon receipt of a ticket for the daily or weekly supply.

BREAD AND PEACE

I questioned a number of people as to the reason why the war ended so suddenly, and one very intelligent young man in a stationery shop expressed the opinion of the majority with whom I discussed the subject when he said that the people were starving; that they had to have bread; that there was a great deal of dissatisfaction; that the papers had kept the facts regarding the war situation from the German people and they did not know how badly their army had been beaten; and that the papers had talked of victory until September and October, when the Germans made their peace drive. This young man and others said that the terms of the armistice were considered very hard, yet they were willing to do anything to end the war and get food. The German people then saw that their only hope of getting peace—which meant to them bread—was to overthrow the Kaiser's regime. The Kaiser was informed of the dissatisfaction of his people and, realizing that his life was in danger, he abdicated and fled to Holland. It was the angry cry of his hungry subjects that reached the ears of the German monarch, as well as the fact that he knew that his armies were beaten and were becoming demoralized, which caused the greatest despot in history to give up his "divine" right to the throne.

Hunger was also the moving power that vacated the thrones in some of the lesser kingdoms of the German Empire. The King of Bavaria before the war affected agriculture and had a large stock farm to which he gave his personal attention. When food began to be very scarce in 1917 the king sold milk to his subjects at a higher rate than had been charged by the dairymen. The disaffected laborers used this as propaganda in prejudicing the people against their king and the epithet "profiteering milk-farmer" was given him. I was told that this incident helped to make him so unpopular that he was forced to abdicate.

TUBERCULOSIS AND OTHER DISEASES

Persons who are in a state of low vitality fall easy victims to tuberculosis, pneumonia, and many other diseases. Tuberculosis and pneumonia are, therefore, increasing enormously among the Germans. I could not get statistics proving this, but doctors and people from all classes told me so.

One physician, a dermatologist, said that there had been a very great increase in skin diseases, particularly urticaria (nettle-rash) and other trophic disturbances. An apparently new skin disease

has appeared in the form of nodules all over the body, often with considerable pigmentation of the skin of the face, which is said to be very difficult to cure. These skin troubles are undoubtedly caused by the lack of proper nourishment, and also the lack of soap which made it impossible for the Germans to keep as clean as they should, although they were never fond of bathing. I asked him if he had seen any skin lesions resembling pellagra, which is prevalent in the Southern states, and which has been claimed to be due to an unbalanced diet not very unlike that which the Germans have been getting; but he replied that as far as he knew there had been no cases of pellagra in Germany, and that he had seen no skin lesions that resembled those of that disease.

The severe types of anemia among the women and children are said to occur frequently, and some estimate that more than a million people in Germany have died because of lack of proper food, not from starvation alone, but from infectious diseases of which the predisposing factor is malnutrition.

The surgeons of Germany say that malignant diseases of the intestines are very much more frequent among young people than was ever known before. It is thought that the coarse bread which is given out by the Government is the cause of this. I was unable to obtain any statistical data as to this increase in intestinal diseases.

INCREASE IN SUICIDES AMONG THE GERMANS

The suicide rate in Germany has always been high, but since the armistice it is said to have increased enormously, particularly among the professional classes, and especially among the doctors. A number of prominent physicians in various lines of work were mentioned as having committed suicide. Among them was Dr. Adolph Schmidt, formerly of Dresden, a colonel in the Germany Army. Dr. Schmidt was considered one of the greatest authorities in the world on intestinal diseases, and I regarded him as probably the most courteous man whom I had known among the Germans and Austrians. The cause of this increase in the suicide rate is thought to be due to lack of nourishment, and the despair of thinking men and women in Germany who see no future for themselves nor for their country.

COMPENSATIONS TO THE GERMANS FROM A LOW DIET

Even starvation has its compensations, and German physicians say that since over-eating has not been possible since 1916, there has been a decrease in stomach diseases, but that when a gastric disorder does arise, it is very difficult to relieve, because the proper diet is lacking. I was also informed that the low diet has helped a great many people who were accustomed to over-eating before the war; and that liver diseases, chronic nephritis (Bright's disease) and other chronic ailments which affect men and women over 50 years of age have decreased considerably. Diabetes, a disease which in many cases is thought to be due to over-eating, and in which the best treatment is starvation, is said to have disappeared from Germany. I asked a physician about gout, a disease formerly much dreaded by the Germans. He laughed, and replied: "We don't have gout any more."

I heard considerable complaint about the beer which the Germans are getting. They said that there is no "substance" in it. It was described as "colored, brown water, a mysterious stuff that people can drink any amount of and never get crazy." One man, however, said that the German people were enormously better off because they can not get their beer.

The Germans have had no coffee for three years. They have prepared substitutes of parched acorns, or burnt barley and chicory, which are not unlike genuine coffee in taste and appearance, but lack the "kick" of coffee because they are free from the stimulant, caffeine, which is the active principle of the coffee bean. Caffeine is really a powerful drug, and, therefore, excessive coffee drinking, such as was the German habit before the war, is harmful. Since coffee has practically no food value, except from the sugar and cream with which it is usually taken, the Germans are fortunate to be freed from the caffeine habit. They have tea, which also contains caffeine, but few Germans seem to have the tea habit.

FOOD CONDITIONS IN BELGIUM

I spent only two days in Belgium in February of this year, having followed the route taken by the Germans in 1914, going from Cologne to Aachen (Aixe la Chapelle), then to Liege, Louvain and Brussels. I was traveling in an automobile and made stops at only three places, Louvain, Brussels, and in one village, the name of which I have forgotten. The difference in the appearance of the people across the line from Germany into Belgium was quite marked. I did not stop at Liege, but saw children on the streets eating big white "buns" that brought up memories of my boyhood days, when a German baker in the town of Cedartown, Ga., where I was born and reared, used to make "buns" the size of a small boy's head. The Belgians appeared to be well nourished, and in Brussels, while food was expensive, 'though not much more so than in New York, plenty of cakes, pies, meats, eggs, and apparently all kinds of food, were obtainable. Belgian rations as allowed by the Government are bountiful when compared to that of the Germans. Apparently the United States Food Commission has been able to supply Belgium with food and clothing throughout the war.

I did not have the opportunity of talking to any one in Belgium except hotel and shop keepers, but apparently the Belgians, in so far as food is concerned, have fared better than any other country in Europe. I could get no information of value regarding nutritional diseases, but was informed by laymen that tuberculosis has increased during the war, and that the death rate among children has also greatly increased.

GOLDBERGER'S THEORY OF THE ETIOLOGY OF PELLAGRA

I desire it distinctly understood that I do not pretend to present a thorough study of food conditions in the European countries that I visited. It would take months to make anything like an accurate investigation of food conditions and nutritional diseases in any one country. Statistics on a large scale in any country are not to be had, and they would be thoroughly unreliable if there were any, because of the war conditions in Europe. I also recognize the fact that the epidemiological study of a disease is not the best way to determine its etiology; but it is surely suggestive that with much the same food conditions in a number of European countries that exist among the poor in the rural districts of the South, which Goldberger, with many well known medical men concurring in his opinion, has announced is the cause of pellagra in the Southern states, there seems to be very little pellagra—none in Germany, where food conditions are worst.

I am sorry that I have never been able to accept without reservation the Goldberger theory of the etiology of pellagra,[5] because it is the best argument that I know of for diversified framing, and for the general improvement of the living conditions of the rural population of the South. Indeed, I feel that in promulgating his theory Dr. Goldberger and the United States Public Health Service have performed valuable work for the South.

If Dr. Goldberger's experiments had been carried out in Canada, or in Maine, where there is no pellagra, his results would have been more convincing, but they were carried out in states in which the disease was quite prevalent, and under conditions which seem to me did not preclude the possibility of infection playing a part.[6]

THE HIGH PROTEIN DIET IN THE TREATMENT OF PELLAGRA

Dr. Goldberger has also made a contribution of great therapeutic value in stressing the importance of a heavy protein diet in the prevention and treatment of pellagra, 'though I must disagree with him in his stated opinion that medicines are of little value in pellagra therapy. I see here today a number of physicians whom I taught the practice of medicine when they were students in the Medical Department of the University of Alabama, years before Goldberger's theory was announced. They perhaps will remember, as several have told me they do, my having taught that, in my opinion, pellagra in many respects resembled tuberculosis, that in both diseases undernourishment is one of the great predisposing causes; and that the

most essential agencies in their treatment are rest and a diet rich in meats, eggs, milk, and other proteins. They will also remember that as far back as 1907 the pellagra patients in my service at the Mobile City Hospital were treated much like our tuberculosis cases were managed, except that our tuberculosis patients were kept on the porches night and day, while the pellagrins were kept out of the sunlight.

In an address before the Chicago Medical Society in June, 1913,[7] prior to the publication of Goldberger's work, I urged practically the same treatment that Goldberger advises, plus the use of medicines as indicated. I do not claim priority in advising forced feeding in pellagra, because in the Italian literature on the disease there are a number of references to practically the Goldberger diet, before the disease became prevalent in the South; and many physicians throughout the South have been for years using the high protein diet in pellagra.

UNBALANCED DIET THE DOUBTFUL CAUSE OF PELLAGRA

Please understand that I do not even yet say that pellagra is not entirely a nutritional disease, due to an unbalanced and a deficient diet. What I mean to say is that the gigantic experiments which the war forced on the peoples of the various countries of Europe were not unlike those which Dr. Goldberger carried out on a small scale, the results of which have not yet been confirmed by others; and yet in some of those countries apparently there is no pellagra. Even in Italy, where pellagra was almost a scourge a few years ago, the disease has decreased during the war. It seems to me that the inference of there being possibly some other etiological factor than the unbalanced diet as the cause of pellagra is justified.

I have no convictions as to the etiology of pellagra, but somehow from the course and symptoms of the disease it seems to me possible that it may be due to an infection taken into the gastro-intestinal tract from some source. Several thoughts have suggested themselves to me as possible lines of investigations in studying the etiology of pellagra and I will briefly mention them.

SUGGESTIONS FOR INVESTIGATIONS

The similarity of pellagra and syphilis have been noted since the former was first described. The fact that the use of salvarsan and other arsenical preparations, mercury and other drugs that have proved helpful in luetic therapy, have also been reported as successful in treating pellagra, is also suggestive. Syphilis is due to a spirochete which was discovered with the use of the dark-field microscope. Recently a leptospira was proved to be the etiological factor in infectious jaundice; and a few weeks ago Noguchi, who is working under Gorgas with the International Yellow Fever Commission in trying to eradicate yellow fever from the world, using the dark-field microscope, discovered a leptospira which apparently is the cause of yellow fever.[8] It, therefore, has occurred to me that perhaps pellagra may be due to an organism which may be discovered by studying the blood, tissues and excretions of pellagrins with the dark-field microscope.

The only work of that kind that I know of was carried out by Francis in the Marine Hospital, but his experiments were made on monkeys, which may not be susceptible to pellagra. The investigations of Francis in making the effort to transmit pellagra to monkeys were very thorough and should be studied by any one who undertakes any research work pertaining to the etiology of pellagra.[9]

The day before I left Paris, on February 14, Major-General Sir John Rose Bradford and Captain Wilson, of the British Medical Service, were in my office and told me of their investigation of a number of diseases which have been thought to be caused by the filterable virus group of organisms. Using the Noguchi method, they discovered an organism which they believe to be the cause of acute infective polyneuritis. Working along the same lines they isolated organisms from the blood in trench fever, influenza, trench nephritis, mumps, measles, and typhus fever. These organisms will all pass through the Berkefeld filter, but they present certain cultural characteristics which

are distinct and definite in a number of experiments. Investigations of the blood in pellagra following the methods of Bradford and Wilson, on the assumption that it might be due to a filterable virus, may give positive results.

The South has borne the stigma of having much more pellagra than other sections of the country. We have as able and as well-trained medical men in the South as there are anywhere in the world; and if pellagra is due to a micro-organism of some kind, I hope that some good Southern doctor will discover it. It will be a great contribution to the science of medicine from a section of the United States that has suffered most from the ravages of the most dreadful disease that is endemic within our borders.

BIBLIOGRAPHY

1. War Medicine, American Red Cross, Paris, Vol. 2, No. 3, October, 1918, p. 333.
2. War Medicine, Vol. 2, No. 3, October, 1918, p. 346.
3. Ibid, Vol. 2, No. 3, October, 1918, p. 348.
4. Alessandrini Giulio e Scala Alberto, "Contributo nuovo alla etiologia e patogenesi della pellagra." Roma, Tipografia Nazionale di G. Bertero E C. Via Umbria, 1914.
5. Goldberger: The Cause and Prevention of Pellagra. U. S. P. H. S. Report, No. 218, September 11, 1914.
6. Goldberger: Experimental Pellagra in the Human Subject, Brought About by a Restricted Diet. U. S. P. H. S. Report, No. 311, Nov. 12, 1915.
7. Harris: The Digestive Symptoms of, and Diet in, Pellagra. Texas State Journal of Medicine, August, 1915.
8. Southern Medical Journal, Editorial, Vol. 12, No. 3, March, 1919, p. 169.
9. Francis: Cultivation Experiments with the Blood and Spinal Fluid of Pellagrins. Further Attempts to Transmit Pellagra to Monkeys.

AUTHORS' ABSTRACTS

Medicine

Immunization Against Measles. D. L. Richardson and Hilary Connor, Providence, R. I. The Journal of the American Medical Association, Vol. 72, No. 15, April 12, 1919, p. 1046.

Blood serum from patients' convalescent serum was injected intramuscularly into fourteen children who had been exposed to measles, and none of them developed the disease. Usually only one inoculation has been given, and from 15 to 20 c. c. of blood serum given as soon after the exposure as possible, and all during the first week of the incubation period. Three children were inoculated by swabbing the nose and throat of measles patients during the height of the disease and immediately swabbing the nose and throat of the children selected for infection. These three children were given protective inoculation of convalescent serum at the same time.

Among all those exposed or inoculated, none developed measles.

The serum used was taken from patients convalescent from measles, in the hospital, anywhere from one to six weeks after the rash, but usually in the second week of convalescence. The blood was withdrawn in separate tubes, the serum allowed to separate, and after the Wassermann report on each patient's blood the serum was pooled and kept in an ice box. If kept longer than a week, 0.25 % tri-kresol was added.

Blood Pressure in Tuberculosis. W. O. Wilkes, Waco, Tex. Texas Medical Journal, Vol. 34, No. 9, March, 1919, p. 304.

Blood pressure is much below normal in tuberculosis, even in the earliest stages.

It is possible that low pressure from other causes may be an exciting cause in bringing about activity in quiescent tuberculous lesions, if long continued.

Blood pressure observations are of little value unless the observer's methods are carefully described. If the method of taking readings could be systematized it would add greatly to the value of blood pressure observations.

Fishberg says that a systolic pressure below 70 is common in incipient cases. The average of other observers seems to be about 107. In advanced cases the average seems to be about 100.

The average pressure of 319 cases of pulmonary tuberculosis taken by the author in the last two years was 107.2 systolic, and 70.3 diastolic.

Low blood pressure should always cause a careful investigation of the lungs.

Low pressure does not seem to be of any great prognostic significance in tuberculosis, but we are always most hopeful of those cases whose pressure is nearest normal.

Influenza Pneumonia Treated by Blood Transfusion. F. B. Bogardus, Eureka, Mont. New York Medical Journal, Vol. 109, No. 18, May 3, 1919, p. 765.

The writer reports six cases of influenza pneumonia treated by transfusion of blood from patients recently recovered from the disease. In four of the cases the results were very favorable, the patients making a quick recovery.

Two died, one twelve hours after the transfusion, being moribund at the time it was given, and the other thirty-six hours afterward. This latter case might have been saved by a transfusion from a different donor, but was too far away to be given close attention.

One case had severe anaphylactic shock, although the serum of the recipient did not agglutinate corpuscles of the donor. Later tests showed that the serum of the donor agglutinated strongly the corpuscles of the recipient, and the reaction was attributed to that cause. The writer thinks that grouping should be exact, having both donor and recipient of same group, as the reaction in this case nearly killed the patient and no other cause could be found.

The amount of blood used was from 100 to 180 c. c. and was given by the citrate method.

TROPICAL DISEASES AND PUBLIC HEALTH

STUDIES ON MALARIA CONTROL V. THE IMPORTANCE OF DISINFECTING ALL CASES TREATED AS A FACTOR IN MALARIA CONTROL IN A LOCALITY OF GREAT PREVALENCE*

By C. C. Bass, M.D.,
New Orleans, La.

The object of this paper is to call attention to the importance of disinfecting all cases of malaria treated by physicians in localities where the disease prevails to great extent and also to point out some of the causes of failure to do this.

Thorough disinfection of a case of malaria may be beneficial, first, to the patient by curing him and preventing relapse; and, second, to the community, including especially those who live in close association with him, by preventing transmission of the infection to them. In a locality where malaria does not prevail to any considerable extent and therefore is not transmitted, thorough treatment benefits the patient only. On the other hand, in a community where the disease prevails and favorable conditions for transmission exist, it is important that he be disinfected for the sake of others as well as himself.

The importance of disinfecting malaria cases as a factor in the problem of malaria control has been more or less overlooked by most of us, but in some instances it has been recognized. Among those in this country who have advanced and supported this idea should be mentioned Seale Harris. With reference to this particular phase of malaria control, he said:[1]

"It is not my intention to suggest any less vigilance in destroying the Anopheles mosquitoes and their breeding places, and I would urge that these measures be employed to the fullest extent possible. I do maintain, however, that the most important and the most practical measure, at this time, in the crusade against malaria is the radical cure of those harboring parasites, because every patient cured means one less focus of infection."

Henson has been another advocate of the importance of disinfecting malaria carriers as a means of control. As he says:[2]

"Literature on the prophylaxis of malarial fevers teems with articles concerning the eradication of the mosquito, and means to prevent this insect from giving malaria to men, while little is said as to preventing man from giving malaria to the mosquito."

UNCURED CASES THE CHIEF SOURCE OF TRANSMISSION

The chief source of transmission of malaria is malaria carriers who have not been disinfected following attacks of malaria. The usual treatment, whether prescribed by doctors or otherwise, does not disinfect any considerable proportion of the cases treated. Few of the general run of cases of malaria are actually disinfected by treatment. The frequency of malaria relapse shows conclusively that the usual treatment is very inefficient. In a careful study of a group of 3,815 persons living in Sunflower County, Mississippi, in 1918,[3] made with the object of determining the frequency of malaria relapse, it appears that from 50.77 to 68.86 % of all persons who have attacks of malaria during a given year have relapses and not new infections. This is an area of great prevalence in the Mississippi Delta, and it is very probable that the frequency of relapse indicated corresponds fairly well to what occurs in other malarious sections.

If more than 50 % of the cases of malaria that occur during a year are relapses, it is very apparent that if all cases of malaria were disinfected during a given year the number of malaria carriers and sources of infection during the following year would be reduced at least 50 %. Thorough disinfection of all infected persons in a given locality would result not only in a reduction of 50 % in the number of cases of malaria that occur by prevent-

*From the Department of Experimental Medicine, Tulane Medical College, New Orleans, La.

This is one of a series of papers to be published, based largely or entirely upon malaria control work conducted jointly by the International Health Board and the Mississippi State Board of Health.

Read before Mississippi State Medical Association, Hattiesburg, May 14, 1919.

ing relapses, but it would also result in an equal reduction, or in fact absence of new cases of malaria that would occur during the following year because of the absence of malaria carriers as a source of infection. Theoretically, there should be no malaria during a year following the disinfection of all persons who have malaria in a given locality. Such a result has not been accomplished, so far as I know, but it has been approached in the experimental work in malaria control in Bolivar County, Mississippi, and especially in the demonstration made in Sunflower County, Mississippi, in 1918. These figures refer to all persons who have malaria, whether they are treated by physicians or whether they treat themselves. Since it appears that disinfection of all infected persons would result in complete elimination of the disease, it will be interesting to inquire what effect would follow the disinfection of all cases of malaria treated by physicians only. The extent to which the disease would be reduced, as a result of all physicians disinfecting all the cases they treat, would depend very largely upon the proportion of cases of malaria in a given locality that are treated by physicians. As is well known, a large proportion are not treated by them.

PROPORTION OF ALL PERSONS INFECTED WITH MALARIA TREATED FOR IT BY PHYSICIANS

In a study of 31,459 persons in Bolivar County in 1916 and 1917, the total number of persons who gave definite histories of previous attacks of malaria and those who gave negative histories but were found upon subsequent microscopical examination to have malaria parasites in their blood, when used as a basis of calculation and in comparison with the number of cases of malaria reported by physicians of the county as being treated by them, indicates that approximately one-fifth of all the infected persons are treated for malaria by the doctors of Bolivar County. During 1918 a survey was made of 8,053 persons living in an area of one hundred square miles in Sunflower County. The history of recent attacks, and blood examination of those who gave negative histories, indicated that approximately 50 % of the population have malaria during a year.

The reports of the physicians of Sunflower County made to the State Board of Health averaged 8,236 per year during the past five years. The population of the entire county is approximately sixty-three thousand. Basing our calculation upon the estimated number of persons who have malaria in the County and the actual number reported as treated by physicians of the County, it appears that the number of cases of malaria treated each year by physicians is approximately one-fourth, or 25 %, of the number of persons in the County who have malaria. We have, therefore, as a basis upon which to discuss the importance and possible results of disinfecting all cases treated by the physicians, the fairly definite information that approximately one-fifth in Bolivar County to one-fourth in Sunflower County of all persons who have malaria during the year are treated by physicians. Therefore, whatever results would follow would effect especially this fraction of the total number of persons who have malaria. Let us assume that one-fifth, or 20 %, is more nearly the correct proportion treated by physicians.

RESULTS THAT WOULD FOLLOW DISINFECTION OF ALL CASES TREATED BY PHYSICIANS

If 20 % of the cases of malaria were disinfected during a given year, it would reduce the cases of relapse that would occur during the following year 20 %, which would represent 10 % of the total amount of malaria that would otherwise be expected to occur. Not only would it do that, but it would also reduce the chances of transmission and occurrence of new cases to the same extent, or approximately 10 % of the total number of cases that would otherwise occur. It would appear therefore that if all doctors in a given locality disinfected all of their patients by efficient treatment, there would be a reduction of 20 % in the total amount of malaria each year. For example, if that should be done during the present year, there should occur only 80 % as much malaria in 1920 as there would otherwise occur. During 1921 there would be a reduc-

tion of 20 % on the expected 80 %, or an incidence of 64 % of what would have occurred if no cases were disinfected. During 1922 there would occur only 80 % of the expected 64 % of the present prevalence, which would be 51.20 %. It would appear, therefore, that it would take about four years to reduce the prevalence 50 % if the physicians disinfected all of their malaria. This would be a large reduction and is an indication of what the medical profession could contribute to the control of malaria in this State in a comparatively short time.

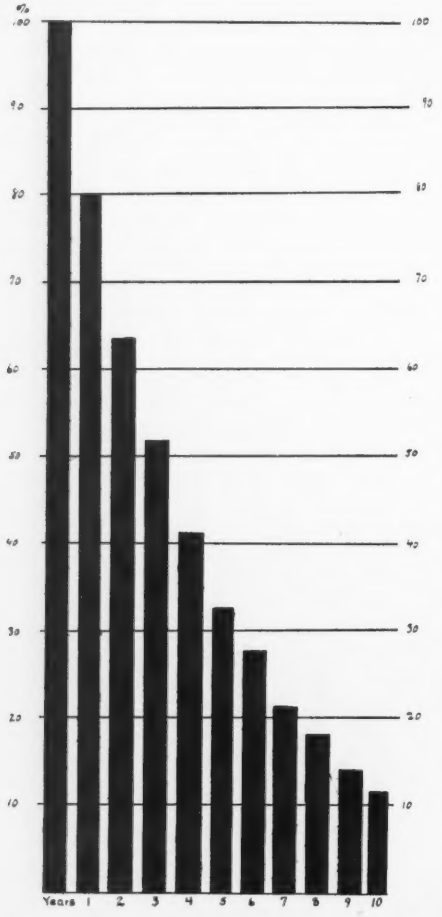

Chart 1.—Reduction of the amount of malaria that would result from disinfection of all cases treated by physicians.

WHY DOCTORS DO NOT DISINFECT THEIR MALARIA CASES

If the possibilities along this line are as great as they seem to be, and if the matter is as important as we believe it is, it will be interesting and perhaps valuable to discuss briefly some of the reasons why doctors do not disinfect their malaria cases. I believe the most important contributing causes may be put down under one of three heads.

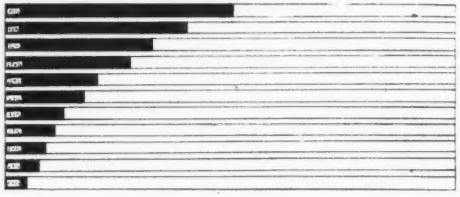

Chart 2.—The effect upon the prevalence of malaria that would be produced in Bolivar and Sunflower Counties in ten years if all doctors disinfected all persons treated by them who have malaria.

1. Spectacular Methods of Treatment. There seems to be a natural human weakness which effects doctors as well as other classes of people by which they are led to adopt and employ spectacular methods of treatment, forgetting or neglecting the tried, established and less spectacular methods. For instance, many doctors all over the country give quinin by deep injection when they know or could know that as good or better results would follow administration by mouth. Lately they have taken to administering quinin intravenously for ordinary cases of malaria when proper investigation would show them conclusively to their satisfaction that it is impractical, to say the least, to disinfect anybody in this way.

When patients come complaining that they can not take quinin, largely because of their own imagination, often encouraged by doctors, they give the patient still further encouragement that he can not take quinin, and give it, therefore, by deep injection or intravenously, or give some special salt or some special form which they can, by suggestion, make the patient think does not have the unpleasant effect that ordinary quinin sulphate does. My

opinion is that it would be much better not to mislead the patient in this way nor ourselves, but to frankly advise him that he can and should go ahead and take quinin in the usual and simplest way. Women are especially likely to adopt the suggestion that they can not take quinin. Some of them seem to take great pleasure in considering themselves exceptional instances who have to have their quinin given in some special way and who can not take it like other people. The more we encourage these ideas, the more people we will find who imagine they can not take quinin.

As a matter of fact, practically all persons can take quinin without any great amount of inconvenience or discomfort. It is true that sometimes a considerable amount of discomfort is produced, but the discomfort is nothing like the discomfort produced by malaria, and usually it subsides in a short time. Those who wish to disinfect their patients must abandon their spectacular methods of treatment and their special prescriptions and forms of quinin. Those who continue with such methods will have few actual cures of malaria to their credit, whereas those who give quinin in sufficient doses for sufficient length of time will disinfect all of their cases. Anybody who is skeptical about the correctness of this statement can confirm it for himself if he will just carefully follow a few cases properly treated. Regardless of any inefficiency of quinin given by injection, the discomfort produced and the impracticability of continuing it long enough to disinfect malaria patients is sufficient argument against its use except perhaps in extremely rare cases.

2. Not Giving Patients Convincing Advice as to Treatment.—It often occurs that following the relief of acute clinical manifestations of malaria the doctor advises the patient to take quinin for a variable length of time. Sometimes the length of time is specified and it may be sufficiently long to disinfect the patient. Unfortunately, the advice is usually given in such a way as not to convince the patient of the necessity of it. He usually does not understand that he still has malaria parasites in him after all symptoms of the disease have disappeared and that the continued use of quinin is necessary to disinfect him and prevent relapse. It is not necessary to tell the patient that quinin will not be inconvenient for him to take and will not produce any discomfort. It is more important to explain to him that quinin is the only remedy that will disinfect him and that it will do so only provided it is taken right for a sufficient length of time. If he is one who is especially susceptible to the unpleasant effects of quinin he is unfortunate, but this is no argument against its use if he has malaria.

Many cases get rid of their parasites on less treatment than others, but I believe that the minimum duration of treatment for all cases should be eight weeks. This will disinfect more than 90 % of cases. It will do it, however, only provided the dose employed is sufficiently large. Fortunately, it is not necessary that it should exceed more than about ten grains a day for adults and a proportionate dose for children. If we wish to disinfect our patients, therefore, we must advise them in a way to convince them of the necessity of taking treatment for a sufficient length of time. It must be an extremely difficult patient to reach if a doctor in whom he places confidence can not explain to him convincingly what malaria is and the necessity of carrying out proper treatment to prevent relapse and the transmission of the infection to others.

3. Not Employing Efficient Treatment. Another source of failure to disinfect malaria cases is the use of inefficient treatment. Though quinin is a specific for malaria and will cure all cases, it will not do so unless the dose is sufficiently large and unless it is taken for a sufficient length of time. The common practice amongst those who treat malaria over this country is to give quinin for a few days followed by some preparation of quinin and perhaps arsenic and other drugs. The dose of quinin is insufficient to destroy parasites and disinfect the individual, and even though he stuck to the treatment as long as advised he would still fail to be disinfected. We should recognize that no tonics or other drugs have any specific action in the destruction of mala-

ria parasites and that if employed at all they should not be allowed to take the place of the necessary amount of quinin nor should the dose of quinin be reduced to below what is necessary to destroy parasites. Generally it is much better not to give anything besides quinin to malaria patients following acute attacks.

SUMMARY

1. It is important to disinfect persons treated for malaria for their own benefit to prevent relapse, and also to remove the source of infection to others.

2. If all cases of malaria treated by physicians were disinfected by the treatment, it would result in rapid decline of the prevalence of the disease. It would reduce the prevalence of malaria about 90 % in ten years.

3. The chief causes of failure at the present time are believed to be, (a) spectacular methods of treatment, (b) not giving patients convincing advice as to the nature of the disease and necessity for proper treatment, and (c) not advising efficient treatment.

REFERENCES

1. Harris, Seale: Prevention of Malaria. Jour. A. M. A., October, 1909, Vol. 53, pp. 1162-1165.

2. Henson, Graham E.: Man, the Principal Etiologic Factor in the Perpetuation of Malaria, with Special Reference to the Endemicity of the Disease in the Temperate Zone. Jour. A. M. A., May 2, 1914, Vol. 62, No. 18, pp. 1374-1377.

3. Osler Anniversary Volume, 1919, Paul B. Hoeber, 69 E. 5th Ave., New York, publisher.

REPORT OF A STATE HEALTH OFFICER*

By S. W. Welch, M.D.,
Health Officer, State of Alabama,
Montgomery, Ala.

The events which have transpired since the writer's last report have been less spectacular than in the preceding year, but have been of no less far-reaching importance to the people of the State of Alabama.

After a careful study of the public health problems confronting the citizens of Alabama, the conclusion was reached that a business organization with the unit of operation corresponding with the political unit was the first step to be taken. Observation of the results in counties where all-time health officers had been established without sufficient means to employ assistants, disclosed the fact that we had expected too much of the system which provided all-time health officers. The conclusion was reached that we would recommend to each county that a sufficient appropriation be made to supply a minimum personnel of a health officer, a rural nurse, a rural inspector and some one to keep the office and make microscopical examinations. We have to report, in addition to the counties of Walker, Tuscaloosa, Elmore, Jefferson, Talladega, Madison, Choctaw and Pickens, that Lauderdale, Mobile, Calhoun and Montgomery have adopted the all-time health officer system and have made appropriations sufficient for the support of an organization. Five other counties are being organized under a co-operative arrangement with the International Health Board, under the supervision of a Field Director. It is contemplated to build a health organization in each of these counties, turning it over to the local authorities as soon as it is capable of independent function.

It is proposed to put another man over five other counties in a similar work as soon as money can be obtained from the Legislature to finance it. The International Health Board has advanced the money to the State Board of Health to operate the first five months, on reliable assurance that the State would assume its part of the burden in July, 1919.

During the summer of 1918, Congress appropriated $1,000,000 for state aid in the control of venereal diseases. Alabama's share of the appropriation was $23,247.15. The appropriation was made contingent upon the State's putting up a like amount, but was immediately available for Alabama, pending the meeting of the Legislature. Mr. Blasingame was elected by the Board as Field Representative. He represents the U. S. Public Health Service in the work, but is *per se* a member of the force of the State Board of Health.

The work of organizing venereal clinics has gone on as rapidly as is consistent with stability. Mr. Blasingame is a tire-

*Read before the Alabama State Medical Association, Mobile, April 15, 1919.

less worker, and a most capable and loyal helper to the Board. Reliable assurances have been given the Board that the 23,000 and odd dollars necessary to secure a similar appropriation from the Interdepartmental Social Hygiene Board to prosecute this work next year would be available next July. It is planned to establish free clinics for the treatment of venereal diseases in every county in Alabama as rapidly as is consistent with stable administration.

I would pause just long enough here to express the conviction that any public health work undertaken without a stable business organization to carry it on is a mistake and should not be done. It is best to take more time and do the work thoroughly as you go. Sentiment and gush are not good foundations on which to build a superstructure. If we wish to stand against the storms of public criticism and natural reaction to all progressive movements, we must lay our foundations well.

The Board is greatly indebted to the U. S. Public Health Service for help in several fields of endeavor. It would have been impossible, with our meager means, to accomplish anything along some lines without this aid. In the Muscle Shoals District 87 miles of ditches have been constructed for mosquito control work, and large areas of swamp lands and several large and unsightly ponds have been drained. The knowledge gained in the science of vertical draining ponds is a most useful addition to our sum of knowledge. About 120 miles of ditches have been constructed in Montgomery and large areas of swamp lands have been drained. In Anniston, 80 miles have been constructed. It is to be regretted that local authorities have not subsequently taken over the upkeep of this work because in each instance a business organization had not been constructed along with the ditches and things.

There have been 130,000 persons inoculated against typhoid fever by the Service and county health officers of the State. The Service furnished all of the vaccine. There have been 50,000 persons vaccinated against smallpox.

The Service is leaving Alabama as soon as the State and local authorities can take over the work in the several localities in which they have been operating.

This organization should go on record as expressing its appreciation of the aid given the State Board of Health during the distressing period through which we have just passed.

The Child Welfare Board has made studies of conditions in three localities in Alabama: Dothan, Selma and Gadsden. The studies have been conducted by Miss Jessie Marriner and were completed on April 1, 1918, at which time Miss Marriner's contract with the National Board expired and she joined the Alabama State Board as Director of the Bureau of Rural Nursing. She is present at this meeting, and I would be pleased to have every doctor here meet her.

Dr. Ada Schweitzer conducted a study of mill operatives with the object of ascertaining the normal height and weight of Southern mill operatives of given age. She represented the Bureau of Labor and worked in Huntsville, Gadsden and the several mill villages in Chambers County.

Work with the International Health Board has been unsatisfactory because there was no Field Director to look after it.

In my last report I advocated the sanitation of small towns over the State. Fort Payne had been successfully worked and work was in progress in Andalusia, Florence and Ashland. This plan was found to be a failure. The County as a unit is the only practical plan of operation.

In the spring and summer of last year work was begun in Sumter, Covington and Lee counties. The influenza outbreak interrupted the work in all the units and at the close of the year the Directors in Sumter and Lee resigned. Dr. Luckett, in Covington, has stood at his post under rather trying circumstances, and the Board feels that it has in him a valuable man. It has been thought advisable to send him to Madison as an assistant to Dr. Grote. Dr. Wm. S. Keister will direct the work of the five counties, co-operating with the International Health Board. Dr. Keister is a native of Virginia and has had about five years experience with the State Board of Health of Virginia.

Dr. H. M. Weedon, of Troy, has also

been added to the administration staff as State Director. He will have charge of all emergency work where the counties need help from the State. Dr. Weedon is well known to you and needs no introduction.

There have been 598 deaths reported to the Board from typhoid fever. There have been no serious outbreaks anywhere. In Huntsville, where more than 100 cases occurred in 1917, only four occurred in 1918, under the able administration of Dr. Grote. There has been a similar fall in case incidence in Talladega, under Dr. Burt, and in Birmingham, under Dr. Dowling. It is remarkable that no increase in the case incidence occurred at Muscle Shoals District when there was such a large and sudden increase in population. It is a splendid commentary upon the work of the U. S. Public Health Service under the direction of Drs. Mustard and Parran and their able assistants, Sharpe, Lucas, Stramquest, Robertson, and Abernathy.

Malaria has been less prevalent than usual and a notable fall in case incidence has been observed where mosquito control work has been done.

There were outbreaks of smallpox in Bibb, Cullman and Shelby Counties. There were more than 100 cases in Cullman, but the outbreak was promptly checked when the U. S. Public Health Service detailed a force to vaccinate and isolate all cases and contacts.

Pneumonia complicated with influenza has been very fatal. The influenza epidemic marks the most pathetic spot in the history of public health activities. It came like a cyclone and swept over the State like a prairie fire. Thanks to my two distinguished predecessors, we had an organization in Alabama that functioned from the very beginning of organized effort to combat the disease. Dr. Perry presided over the office and the State Health Officer remained in the field. We were able to furnish every community which requested aid relief within twenty-four hours. Except for nine men loaned by the Army, we were able to care for our people with members of our own organization. This leads up to a most interesting proposition which the profession of the State is asked to consider. Congress passed, last fall, what is known as Senate Bill No. 63, creating a Medical Reserve, giving the U. S. Public Health Service the power to organize this Reserve for emergency work in times of stress such as was experienced during the influenza epidemic. At the meeting of the State and Provincial Health Officers, in Chicago, certain recommendations were made by them and accepted by the Surgeon-General of the U. S. Public Health Service. It is planned for the state health officer of each state to accept commissions under the Surgeon-General of the U. S. Public Health Service and remain on the inactive list, to be called into service in times of need. It is recommended that the state health officer shall have an organization in each county consisting of volunteers who shall be appointed officers of the U. S. Public Health Service to remain inactive except in times of need. When called to service, the volunteers receive $200 per month and expenses and are under the direction of the state health officer, who handles the situation under the dual authority of the state and National Government. It is expected that there will be another outbreak of influenza next winter and it is hoped that the profession will respond promptly to this plan of organization so that we may care for our own people within our own borders.

In an effort to interest school children in their personal health, several thousand cards giving the normal weights and measures, by years, were distributed among the public schools of the State and the teachers requested to have each child weighed once each month. A bulletin is in course of publication (the State Board of Health co-operating with the Girls' Industrial School) which contains a balanced ration, by years, for children. It is hoped to correct, by proper feeding, deviations from the normal in weight. Over 700,000 inspection cards have been distributed and school inspection instituted wherever practicable. A cordial understanding has been reached between the Department of Education and the State Board of Health looking to a close co-operation between the two departments in work in rural public schools.

The Department of Sanitary Engineer-

ing has been more active than in previous years. A number of water supplies have been investigated and the superintendents instructed in the latest methods of keeping these supplies wholesome. Malaria control work has been promoted in several places. We hope to enlarge this department by additional personnel in the near future. It is one of the most useful Bureaus operated by the State Board of Health.

The work of the State Laboratory has been much interrupted, but has been reorganized with practically the anti-war force in charge. They have examined 12,500 specimens. Four hundred and forty-seven animal heads have been examined for rabies. Three hundred and fifty people have been given the anti-rabic treatment with only one death. This was the case of a man from Tallapoosa County, who was bitten on the hand by a rabid dog. It has been found that bites on the hands and face are more dangerous than bites on any other portion of the body, probably due to the fact that other bites are on unexposed parts, and are more or less protected from inoculation by the attacking animal's teeth. Tissue examinations have been discontinued.

The Anti-Tuberculosis League held a meeting in Birmingham in February. It was not well attended by citizens of Alabama, but a number of prominent workers in this field of endeavor were present from other states. It is to be hoped that the efforts of the League will meet with more cordial support as time goes by. An effort will be made to obtain an appropriation from the State for a tuberculosis sanitorium when the Legislature reconvenes in July.

It is gratifying to be able to report the sympathetic support and co-operation of Governor Kilby in our plans. He openly advocates an appropriation of $150,000 for public health work. It is also gratifying to report the cordial sympathy of both houses of the Legislature and the outlook for favorable consideration of all of our plans for development are very flattering.

The Board has gone forward developing its work with funds furnished by the Scottish Rite Masons, anticipating the appropriation in July. The Board feels that its work is on the eve of very broad expansion and its usefulness to the people is being appreciated more and more every day.

ANNUAL MESSAGE OF THE PRESIDENT*

By I. L. Watkins, M.D.,
President, Medical Association of the State of Alabama,
Montgomery, Ala.

I desire to thank you most heartily for choosing me to be your President during the past year. This honor is usually conferred upon one who has in some way, by good works or otherwise, merited the distinction. I make no such claim, but attribute my election to your generosity or to the spirit of the times. Just as the election was due to take place the newsboys were crying "Extra! Extra!" all over the streets and the most distressing news was coming from France. The headlines were "The Germans in three miles of Amiens and Haig's Army with their backs to the wall." "The Germans in eight miles of Verdun and the French Army Falling Back." So with your usual patriotism all members of military age volunteered, and one who was unable to see service, and who belonged to the class of the unfit, was elected President. Feeling the call to service just as strongly as those of you who went to war, I cheerfully accepted the honor and assumed the obligation.

THE PROGRAM

A glance at the program this year will indicate that a departure has been made from the regular routine. In view of the fact that this meeting is being held at the close of the most momentous war which has ever taken place in the history of mankind, and in view of the fact that practically one-fourth of our members have been engaged in this war, it has been thought wise to cast the program in such a way as to bring to the profession at large the lessons which have been learned. It will be noted that most of the reporters

*President's Address delivered before the Med ical Association of the State of Alabama, April 15-17, 1919.

and all of the visitors are men who have been in military service.

LESSONS LEARNED FROM THE DRAFT

I desire to call the attention of the people of this State to some important lessons which we have learned in connection with the selection of men for the Army. First, it has been shown that a very high per cent of our young men between the ages of 18 and 45 were unfit for military duty. The causes of this unfitness fall under two general heads: (1) non-development because of improper living conditions; and (2) the existence of communicable diseases, such as tuberculosis, hookworm, malaria and venereal disease.

Men of draft age are but an index to the community at large. They are no better nor worse physically than those older and younger, and it is distressing to contemplate the degree to which our people are handicapped because of the conditions above set forth.

Efforts have been made to have papers presented on "Reconstructive or Orthopedic Surgery" and upon "The Medical Lessons from the Draft." It has been impossible to secure writers on these topics, but I hope that you will be more fortunate at your next session. An editorial paragraph in one of the State papers furnishes much food for thought. I quote:

> "The passing of the draft boards marks the passing of a system which millions of Americans can look back upon with grateful sentiments. It sifted out men for the Army and took others and placed them in classification based upon the special fitness of the individual. Others were startled to hear that they were not physically sound. The unpleasant news which the boards gave them sent them to their physicians and in thousands of cases caused young men to discipline themselves for the sake of their bodies. This they might not have done, but for the physical examinations which they underwent. On the whole the draft boards were most efficient and did their work splendidly."

The statistical compilation of the work of these boards will be very valuable as a basis of public health work.

VOLUNTEER MEDICAL CORPS

During the first part of the year, in fact up to the signing of the armistice, but little attention was given to matters affecting the Association in a general way. The entire efforts of the organization were directed toward furnishing Alabama's quota of doctors for the Army. The value of our county organizations was beautifully demonstrated in the work that was accomplished. It was not a difficult matter to take the medical census of the State and to locate those who were of military age and who could best be spared from civil life. The War Department estimated that Alabama's quota was 525 doctors. Much to the credit of the profession, be it said that many more than that number offered their services and more than six hundred were accepted. This work entailed considerable strain upon the office force of the State Board of Health, and much of the success of the undertaking is due to their efforts.

Many members of the profession who stayed at home have had opportunities for service, both in the Volunteer Medical Service Corps and on draft and medical advisory boards.

The Provost Marshal-General, in his second report, says: "The medical profession has responded to the call of the Government and served in a devoted manner that has received universally favorable comment. It is gratifying to note the part which the profession has taken in thus assisting to raise our great Army, as well as its valuable contribution to the war generally. Medical advisory members served without compensation. The exacting details incident to the examination of tens of thousands of registrants, drawn from every precinct of the United States, have been accomplished with a patient, prompt precision that impels me to express my personal appreciation for their loyal services to our Government through their co-operation with this office. It is keenly appreciated that their duties were an additional burden to busy lives, and were not publicly recognized either by uniform, rank, or the applause of the multitude. They continued at their tasks unflinchingly, ofter far into the night, with only conscience as their commander, and with stern duty as their censor. To them whose services were so cheerfully, assiduously and efficiently rendered, the Nation owes a debt of gratitude."

THE BOARD OF CENSORS

Within the last few months two members of the State Board of Censors, Dr. C. A. Thigpen and Dr. Glenn Andrews, have resigned. I appointed Dr. W. D. Partlow to fill the place of Dr. Thigpen and Dr. J. N. Baker to fill that of Dr. Andrews. The constitution makes it the duty of the President to fill such vacancies by appointment, said appointees to hold until the next annual meeting. Upon you rests the responsibility of permanently filling these positions.

THE COLLEGE OF COUNCILLORS

It has been the policy of the Association to distribute members of the College of Councillors in approximate proportion to the number of members in the several districts. It occurs to me that it is equally good policy to have one or more Councillors in each county society. I recommend that each county society nominate annually one of their number for membership in the College of Councillors so that if a vacancy is to be filled the society will have an opportunity to express its preference in the matter.

PERSONNEL OF THE STATE BOARD OF HEALTH

During the period of the war the State Health Department was much handicapped by the fact that a number of its employees entered the service. The Sanitary Engineer, practically the whole force of the Laboratory, and some of the field men volunteered. But for the valuable assistance rendered by the United States Public Health Service and by certain individuals in Montgomery, it would have been impossible to maintain the State Laboratory and the people would have suffered great inconvenience.

EPIDEMICS

No unusual epidemic occurred in the State until October, at which time so-called "Spanish influenza" made its appearance. The number of deaths from this disease alone have exceeded those caused by any previous epidemic which ever visited the State. Up to the first of January there had been six thousand deaths from influenza and nearly half that number from pneumonia. As most of the cases occurred in persons between the ages of 15 and 45, the financial loss to the State was particularly great, as it carried off so many in the productive period of life. The want of definite knowledge of the cause of the disease and the method by which it spreads from one community to another, is responsible for the high death rate. This epidemic occurred at a time particularly favorable to its spread because of the concentration of so many men in camps, but it can also be said that the conditions for a scientific study of the disease were very favorable because of the fact that many of the leading men of the profession were engaged in military service and those best fitted for the task were assigned the duty of investigating the cause and cure of the disease. Their work is not yet finished. But we have a reasonable hope that ere long the problem will be solved and that the profession will have worked out methods to treat successfully the disease and to prevent its spread. Then health officers and private practitioners will present a solid front to this foe of humanity.

During the influenza epidemic the wisdom of organizing the Volunteer Medical Service Corps was demonstrated. Anticipating the necessity for supplying medical aid to certain communities which had been left without adequate medical protection, a call was made for twenty volunteers. Thirty responded. During the months of October, November and December more than forty communities in the State were given temporary medical assistance. These volunteers were all members of the Volunteer Medical Service Corps. The campaign was financed by the United States Public Health Service from a fund made available by Congress for the suppression and control of communicable diseases. The patriotism of those who responded to this call can not be commended too highly.

PUBLIC HEALTH

I am glad to say that the people at large are beginning to show more appreciation of public health activities. It is now admitted that public health means public wealth. Public health is the most important function of government. Notwithstanding the awakening noted above, as

yet the work for the most part has been a mere demonstration of what can be done. So far we have touched only the high places along the railroads and about the stations where it is convenient to go. A perfected public health organization should not only operate in the towns and cities, but the gospel of good health should be carried into the rural districts, to every cabin and hovel in the State. It is an uncontroverted fact that most people do not know the principles of sanitation, nor the laws of hygiene which go to develop a perfect man or woman. A remarkable demonstration of what correct living and right teaching will do for an individual may be seen in the great physical improvement which has taken place in our soldier boys after only a few months in camp. A properly organized board of health should have the following departments: Vital Statistics, Epidemiology, Laboratories, Sanitary Engineering, Public Health Nursing, Child Welfare and School Hygiene, Industrial Hygiene, Oral Hygiene, Inspection and Publicity and Education. Closely associated with this State organization and controlled by it there must be in every county a health unit, consisting of a full-time health officer with a laboratory assistant, school nurse and sanitary engineer. These county units should depend upon the size of the county, and should have sufficient force to go into every home and teach the people at first hand the importance of maintaining good health, which includes proper food, cooking, bathing, sleeping, dressing, home sanitation and the destruction of disease-bearing insects. These plans will cost much money, but the state will receive millions for every thousand expended. The maintenance of such a system would insure a strong, vigorous population, as power of production would be far in excess of any past generation. The State will be relieved of much of its burden of caring for blind, crippled and defective children and of many insane and tuberculous adults. The prospects for the consummation of the above outlined plan are now very bright and this Association should get away from any dissension in our ranks on the subject of organization of our health system and by a united effort go forward in the accomplishment of the great purpose for which this organization was formed.

There is a material difference between a medical health system and a political health system. In the first every doctor in the State is bound by his oath to give the Health Officer his loyal and enthusiastic support, whereas in the latter, health officers are chosen because of their adherence to some political tenet and the question of competency is not considered. I will say here without fear of successful contradiction that the results heretofore obtained in public health administration in Alabama will far outmeasure those obtained in any other state when the question of money expended is considered.

Now that we are making fairly good progress in using all-time health officers in certain counties, and that we hope soon to extend the same plan to all counties of the State, I respectfully call your attention to the importance of securing suitable men for public health positions. Public health work is just as much a specialty as medicine, surgery or obstetrics. It is equally as important to have a well-trained medical man to do your public health work as it is to have a well-trained medical man to attend your cases of midwifery and to do your surgical operations. Good medical training is essential as a basis in both cases.

Among the men who passed the initial physical examination and were admitted in the Army, the existence of malaria, hookworm and venereal disease was considerable. Because of the presence of these diseases our men suffered more than many others and many deaths from pneumonia occurred. This is a tragic lesson and furnishes a cogent argument for a larger appropriation for public health work.

General March, Chief of Staff, shows in a just-published report that the death rate of disease in the Army has greatly declined. The following table will be of interest:

	Deaths per 1000	
	Battle Rate	Disease Rate
Mexican War	15	110
Civil War	33	65
Spanish War	5	26
Late War	57	17

It will be noted that while the battle rate is very irregular, namely, 15, 33, 5 and 57 in these four wars, the disease rate shows a great decline, 110, 65, 26 and 17. These figures include the deaths from influenza last fall. Certainly this decline will encourage those of us who have been laboring to reduce human mortality by hygienic and medical means. I wish to press home the lesson that what has been done in the Army may also be done in civil life.

SOME FURTHER PROBLEMS IN PUBLIC HEALTH

In Alabama our greatest menaces to health are typhoid, malaria, hookworm, tuberculosis and venereal disease, but the reduction of these diseases to a minimum is merely a question of time. That each one of them can be practically wiped out of existence has been demonstrated by the work done by public health agencies during the war. We should not be discouraged in our effort to control malaria. The fact that it was accomplished in Panama should encourage us to undertake it in any other place. Typhoid and hookworm should be easily controlled because the methods are comparatively inexpensive and are well known. The control of venereal disease, involving as it does a revolution in our social system, presents many problems. Personally, I do not think the profession appreciates the danger done by venereal disease. It is a matter of history that tuberculosis occurred very rarely in the Negro race during slavery. Venereal disease was also rare and when it did occur it was placed under the most rigid quarantine until entirely beyond the state of infection. With freedom the colored man in a short time became the victim of both venereal disease and tuberculosis. Public opinion must be educated to recognize venereal disease as a dangerous contagious disease, which must be treated as any other infectious disease. It is my earnest hope that the agencies now being put into operation will quickly and positively stamp this disease out of our country.

It is appropriate that I make some allusion to the finances of the public health work which we are all so eager to see enlarged. It is certainly not to the best interest of our great State that public health activities should be dependent upon the uncertainty of legislative appropriations. I believe our tax payers are beginning to see this. In my opinion it would be both wise and profitable to the State of Alabama, like some other states, for it to levy a special tax to finance the Health Department. Such a plan would prove to the world that we are determined to control epidemics and to further enlarge the operations of the State Board of Health. Such a knowledge would encourage immigration more than anything our law makers could do. I beg that this Association keep such a plan in mind, and at the proper time take steps to inaugurate the special tax method.

RECOMMENDATIONS

As mentioned above, the lessons of the war period have been far-reaching and varied. Our plan of health organization has stood the strain of practical application well, but it is believed that certain changes would better enable us to meet modern conditions. The health officer who gives only a part of his time to the work has been found unequal to the demands of a modern health program. It is, therefore, recommended that the office of part-time health officer be abolished and in the future any health officer elected shall be elected for all of his time. It is further recommended that no health officer shall qualify for the office to which he is elected until his election has been approved by the State Committee of Public Health. It is recommended that the State Health Officer be empowered to remove from office a county health officer who is found to be inefficient or otherwise not qualified.

It is further recommended that in counties where no health officer resides a quarantine officer shall be appointed by the State Health Officer on the recommendation of the county board of censors.

It has been found in the larger centers that the county society has not functioned well as a board of health. It is, therefore, recommended that in matters of public health the committees of public health shall have final jurisdiction and shall be the county boards of health of their respective counties.

It is recommended that what is known as the Model Law for the collection of vital and mortuary statistics be adopted.

It is recommended that laws for the prevention of blindness be enacted.

It is recommended that the inspection of hotels, cafes, milk and meat depots and all places where food is furnished or sold be instituted.

Improperly appointed barber shops are a fruitful source for the spreading of syphilis and many skin diseases. It is, therefore, recommended that a state system of inspection of barber shops in villages and rural sections be instituted by the board.

It is recommended that suitable laws preventing soil pollution, pollution of streams and other sources of water supply be obtained.

It is recommended that laws relating to the control of communicable diseases be rewritten and made to conform to the requirements of modern conception of the spread of disease.

The law controlling nuisances has been found to be cumbersome and hard to enforce. It is recommended that it be changed so as to make it easier of enforcement.

In closing let me remind you that the warfare in which the doctor is engaged will never cease. No armistice can ever be signed. No peace terms can ever be written, but from the day the doctor enlists in the great army and starts out upon his campaign until the day that he "goes west" every hour is the "zero hour" and he must stand ready at all times to give valiant combat to the hordes of disease that would carry suffering and death to those he has sworn to protect. Having learned from our military experience lessons of diligence, promptness and obedience, as members of the State Board of Health let us go forward in the great fight to make Alabama safe for humanity.

AUTHORS' ABSTRACTS

Tropical Diseases and Public Health

Milk-borne (?) Epidemic of Septic Sore Throat. D. M. Lewis, New Haven, Conn. Interstate Medical Journal, Vol. 26, No. 2, February, 1919, p. 124.

The data that a certain set of students ill with sore throat were said to eat at a grill, the only place in one city where a dairy sent milk, being found to correspond to the time when septic sore throat was frequent in the pediatric practice of two partners in a neighboring city also supplied by the dairy mentioned, was investigated by the health authorities. Finding that sore throat was said to be frequent in a neighboring town, all three communities being the only ones supplied by this dairy, coupled with the finding that one of the dairy helpers had had a sore throat, determined the statement by the health authorities that the dairy had caused an epidemic of septic sort throat.

The writer's study of physicians' lists of cases in the town mentioned showed that the stated frequency was a part of a greater frequency of the month previous; that no part of either was on the implicated milk. Secondly, that in the pediatric practice had no time relation to the cases of either of the other two communities and could be shown to be a part of a widespread previous and later spread of septic processes not confined to this milk route. Thirdly, the sore throats among the students were not among those who ate at the grill, but were focal to five of twelve dormitories; that it was among the roommates and classmates of those who had had sore throats and scarlet fever six months and one month previously and was again evident in the following semester as sore throats and measles among the same set of students. Lastly, the examination of the data on the carrier with a physical examination showed no time relation as probably causal of any part of the various groups and the stated cessation of the epidemic by stopping the milk was not borne out by the continued similar frequency during the ensuing month in these and other neighboring communities.

More than injustice was done the milk producers; obscuring of what could be shown to be the interdependence of sore throats with previous scarlet fever and later measles, carriage of such contagious diseases among small groups of individuals, was a distinct block to the progress of the public health. Of further interest to the latter is the discussion of the technic of a dairy using hypochlorite solution and the usual flash system of steam sterilization.

SURGERY

WAR, RAILWAY, INDUSTRIAL, GYNECOLOGICAL, OBSTETRICAL AND UROLOGICAL.

SURGICAL TREATMENT OF TIC DOULOUREUX

By J. Shelton Horsley, M.D., F.A.C.S., Richmond, Va.

Probably the most pitiful patients that come under the care of a physician or surgeon are those suffering from tic douloureux. Any one who has seen a typical paroxysm in these patients can scarcely forget it. While the disease is not fatal in itself, the tearing, burning agony of pain often leads to suicide or to an existence that is worse than death.

Tic douloureux must not be confused with ordinary facial neuralgia, which may occur as a neuritis and result in marked continuous pain in one or both sides of the face for a few days. This is usually relieved by narcotics, and if there is a tendency to recur, the underlying cause may be discovered and removed. It may be from a local trouble, as an infected sinus, or a bad tooth, or from a constitutional disease such as syphilis or malaria.

Ordinary facial neuralgia probably bears no etiological relation to tic douloureux, for treatment along the lines just mentioned is utterly inefficient in this latter disease. The attacks in tic douloureux consist of paroxysms with remissions. The pain is often described as coming with lightning rapidity and like a red-hot iron boring into the tissues. It is sometimes initiated by a draught of cold air, a contraction of certain muscles, or even a quick movement of the head.

Relief from pain between attacks is complete, but after the pleasurable sensation of relief, comes the dreaded anticipation of another attack. Usually the intervals of remission become shorter as the disease progresses.

The etiology and pathology of tic douloureux are not understood. Spiller, of Philadelphia, says he has found degeneration in the gasserian ganglia removed at operations. Abbe, of New York, holds that it is probably an ascending neuritis from the branches of the fifth nerve. The consensus of opinion among those who have had most experience with this disease seems to be that the pathogenesis is unknown. Frazier, of Philadelphia, suggests that it may be a disease of the ganglion in the nature of a sclerosis, but he admits that all ideas of the pathology of tic douloureux are of a speculative nature. The fact that the disease is abated and temporarily relieved by peripheral operation or injections of alcohol seems to contradict the views of those who hold that it is a ganglionic disease. But it is well known that destruction of a peripheral nerve may cause temporary alteration in its ganglionic cells and it may be that this is responsible for the relief of pain; and when the function of these cells is resumed, pain recurs.

It is doubtful if any peripheral operation or injection ever cures a case of tic douloureux. The average period of relief from alcoholic injection is about nine months. From peripheral resection in which a considerable portion of the nerve has been removed, it is somewhat longer. In my experience with the surgical treatment of tic douloureux, I do not recall a single case in which a peripheral operation brought permanent relief, and not a patient whom complete removal of the ganglion or division of its posterior sensory root failed to cure. The first patient from whom I removed a gasserian ganglion was operated upon in October, 1903. She was then 62 years of age. She died three years ago and had complete relief from pain in her face after the operation. There are cases, however, in which a severe persistent neuralgia or even a tic douloureux that is confined to one division of the fifth nerve, seems to justify a peripheral operation and the patient would not be satisfied with the major operation at first. In such cases either alcoholic injection or the peripheral operation can be done.

I have had little personal experience

with alcoholic injections and I do not feel competent to discuss them. It is generally admitted that the first or ophthalmic division of the fifth nerve can not be satisfactorily injected, and it is undoubtedly true that peripheral surgery on the second and third branches carries very little risk. Some patients are so nervous that it is necessary to give an anesthetic in order to make an alcoholic injection. In such instances a clean dissection and gradual extraction of the painful nerve seems to be more satisfactory and to be almost free from danger in the hands of those who are experienced in neurologic surgery. It is best to put the facts before the patient frankly, and if, after knowing the temporary nature of the relief of a peripheral operation, he prefers it, this should be done.

Peripheral operation upon the supraorbital branch can be done with no resulting disfiguring scar by an incision in the eyebrow. When the nerve is exposed, it should be grasped by forceps and firm, steady traction made continuously by slowly twisting over the forceps as the nerve is extracted. In this way sometimes two inches or more of the nerve may be removed. The foramen from which it is extracted should be plugged with a piece of the neighboring periosteum which may be packed in the foramen with the end of a probe. Operation upon the second or superior maxillary division of the fifth nerve can best be done within the mouth. Otherwise the scar is disfiguring.

Fig. 1.—Mrs. H., operated upon for removal of the gasserian ganglion October, 1908. Previously there had been a resection of the superior maxillary branch of the fifth nerve, which gave her only temporary relief, and the scar from this operation was very disfiguring. This photograph was taken about two weeks after removal of the gasserian ganglion. The scar from the ganglion operation is now hardly visible and is covered by hair.

Fig. 2.—Excision of the superior maxillary branch of the fifth nerve through an intraoral incision. For description of the operation see text. A long portion of the nerve can be removed without any visible scar or deformity.

The accompanying photograph (Fig. 1) shows a scar resulting from excision of this branch through an external incision. The patient, Mrs. H., was operated upon by another surgeon, obtained some relief, but eventually the pain recurred and I removed the gasserian ganglion in October, 1908. There has been no pain in the region of the fifth nerve since. In a woman, particularly, such a scar is objectionable. It can be avoided by retracting the upper lip on the affected side, injecting a weak solution of epinephrin into the mucous membrane and tissues in the neighborhood of the infraorbital foramen, and making a transverse incision through the mucosa down to the bone just below this foramen. With a periosteal elevator the periosteum around the foramen is stripped up and the nerve is seen emerging (Fig. 2). It is caught with a pair of forceps and gradual traction made over a period of several minutes. Two inches or more of the nerve can be extracted with gradual traction.

The third division is more difficult to reach, but can also be operated upon from within the mouth. An incision about one

inch long is made internal and parallel to the anterior border of the ascending ramus of the lower jaw. The periosteum is stripped up from the bone until the inferior dental spine is felt and the ligament of the jaw which is attached to the spine is divided with scissors. The nerve is just behind this and is hooked up into the wound and as much as possible of it is removed by gradual traction. Injecting the tissue with a weak solution of epinephrin lessens the bleeding.

Eventually, even after removal of several inches of the peripheral nerve, the pain returns, if the patient is suffering from a true tic douloureux. Then a major operation upon the gasserian ganglion must be considered. Objections to this are raised more frequently by the physician than by the patient, as there is an erroneous idea of the mortality and mutilation that follows it. In the early days of this operation, both were considerable. Thus the late John B. Murphy had three deaths in eleven cases and abandoned it. Removal of the zygoma with an extensive amount of bone resulted in marked deformity. In the recent development of the operation, however, the mortality has been reduced to a point where it is no more than that of hysterectomy and the deformity is almost nil (Figs. 1 and 3).

A great improvement in the operation has been introduced by Charles H. Frazier, of Philadelphia, who carried out the suggestions of Spiller in dividing or avulsing the posterior sensory root of the gasserian ganglion. This is called by some "physiological extirpation." It is a well-established fact that no nerve fibres regenerate when destroyed on the central side of their ganglionic cells. This being true, a mere division of the sensory root behind its ganglion would result in the inability of the nerve to regenerate. Operation founded upon this law is upon sound physiologic ground. While formerly I did an extirpation of the ganglion according to the method of Cushing,* division of the posterior sensory root seemed to be a better procedure, and I have adopted it instead of extirpation of the ganglion.

*"Operations Upon the Gasserian Ganglion," by J. Shelton Horsley, M.D., Richmond, Va. Old Dominion Journal of Medicine and Surgery, April, 1905.

Since March 1, 1918, I have operated upon six patients suffering with tic douloureux. In two instances the operation was peripheral. One of these cases, Mrs. B., was operated upon March 5, 1918. The second division alone was affected and this was excised by the method already described (Fig. 2). When last heard from, about three months ago, there was no recurrence of the pain. The second patient, Mrs. R., was operated upon May 10, 1918. There was involvement of both the superior maxillary and inferior maxillary branches. The peripheral operation was done, but it did not afford complete relief. Six months later the patient wrote me that she was suffering considerable pain and I suggested that she return for the radical operation, which she has not done.

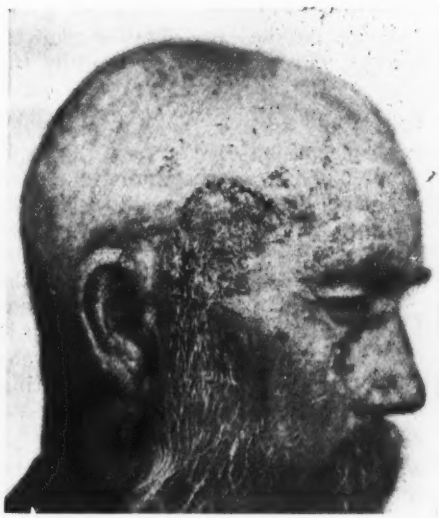

Fig. 3.—Photograph of Mr. W., eleven days after division of the posterior sensory root of the gasserian ganglion. The cat-gut skin sutures are still in place. Relief from pain was complete and there is now practically no scar and no deformity.

There have been four cases during this time (March 1, 1918-March 1, 1919) in which the posterior sensory root of the ganglion has been divided. All the patients recovered satisfactorily from the operation. In three there has been complete relief from pain (Mr. W. A. W.,

operation, August 28, 1918; R. R. colored, operation, December 6, 1918; Mrs. S. B. B., operation, January 16, 1919). In one, however, the pain was produced by pressure of a neoplasm that had infiltrated the tissues in front of the ganglion and had involved areas supplied by other sensory nerves than the fifth (Sallie J., colored, operation, January 2, 1919). Here the relief was incomplete. This case probably should not be classed as a true tic douloureux, but the pain produced by the pressure of the neoplasm was very similar in intensity.

These operations on the posterior sensory root of the gasserian ganglion have been done according to the method of Frazier (Journal A. M. A., May, 1918, pp. 1345-1350). An incision is made in the skin and the superficial fascia so that the base of the skin flap corresponds with what would be the hair line and the skin flap is brought forward and sutured to towels. A flap is then made under this consisting of fascia and muscle, but in a reverse direction, so its base is behind.

The skull is opened with a burr and the opening enlarged until it is about 1½ inches in diameter. The dura is separated from the margins of the bony opening and gradually elevated from the base of the skull. The foramen spinosum, through which runs the middle meningeal artery, is the first land mark. In some cases this vessel may be seized with mosquito forceps, divided, and tied with fine silk or linen. Frazier advises as a routine measure plugging the foramen spinosum firmly with cotton or wax and then dividing the artery. The foramen ovale next comes into view and this leads directly to the ganglion. The dura over the ganglion is split so that the whole upper surface of the ganglion is exposed and the posterior sensory root appears. This is seized with a small blunt hook and slowly pulled out. The wound is closed in layers and a cigarette drain inserted, which is removed in three or four days.

The anatomy and the vascularity of the parts involved is quite variable, and while the operation can not be called an easy one, in experienced hands it should carry little danger. Patience, next to skill, is the most important thing in operations upon the gasserian ganglion. With this technic the operation may be done in a shorter time and with less loss of blood than in extirpation of the ganglion, and the resulting trophic disturbances are not so great.

In operating upon the gasserian ganglion I formerly practiced a method advocated by the late Dr. Robert Dawbarn, of New York, which consisted in putting rubber tourniquets on the arms and legs close to the body just tight enough to constrict the venous circulation without cutting off the arterial blood supply, the idea being that blood would be dammed back in the limbs, the blood pressure lowered, and loss of blood during the operation would be decreased. When the operation was completed the tourniquets were removed and releasing the impounded blood was supposed to be similar to a transfusion. I had used this in several cases before I found it was a dangerous practice. The blood pressure would be lowered, but it would not always come back promptly after removing the tourniquets. I had no fatalities, but the pulse would be weak and the patient in a mild state of shock for several hours. The explanation of the shock can be readily drawn from the excellent experimental work of Frank Mann, of the Mayo Clinic. He has shown that deep shock in animals can be produced by constricting or dividing all the vessels of the leg except the main artery and leaving the artery to pump blood into the leg from which there is no return by the venous route. Evidently this method of Dawbarn was not so much a real damming back of blood as it was an induction of shock. In my last cases in which this practice was abandoned, the pulse remained good throughout the operation and there was apparently no greater loss of blood than when the sequestration method of Dawbarn was used.

ABDOMINAL SURGERY IN CIVIL AND MILITARY HOSPITALS*

By George W. Crile, M.D., F.A.C.S.,
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It is my first and pleasant duty to express my sense of deep appreciation of the honor that has been conferred upon me by your invitation to deliver the Jerome Cochrane Lecture. Moreover, I esteem it a special privilege to participate in your first meeting after the close of the greatest war in history—a war in which to the honor of the medical profession there volunteered and were accepted in the service the grand total of over 34,000 medical men. All honor to those who remained at home to bear the heat and burden of the day—keeping the home fires burning—all honor to those who were fortunate enough to have service overseas. In its service at home and abroad the profession has conferred upon itself an immortal decoration.

In the service in the field many lessons were learned. Every theory was tested in the crucible of practical application on a vast scale. We were dealing with hundreds of thousands of patients as we deal with hundreds here. Surgery lived years in days. The combined experience of thousands of surgeons was immediately available for comparison and for study by the individual surgeon, by the surgical staffs of hospitals, by the consultants, and by the Red Cross Research Society; all of whom were seeking to discard the false—to find and to hold fast to the truth. All questions pertaining to the care of the sick or wounded soldier were thus studied in detail and in the mass by the nations at war; and finally in Paris at a conference of those chosen by their respective governments to make up a consensus of opinion, conclusions from this great mass of evidence were scrupulously drawn. In the course of our discussion of abdominal surgery we shall refer to some of these conclusions.

*Jerome Cochrane Lecture delivered before the Medical Association of the State of Alabama, Mobile, April 16, 1919.

In selecting the theme for this occasion it seemed fitting to choose a branch of surgery which stands as one of the great contributions of the South, for with abdominal surgery the honored name of Ephraim McDowell will always be associated.

This paper is based upon the experience of my associates and myself in 12,383 abdominal operations in civilian practice, upon our experience with the British and American Armies in the field, and upon the conclusions of the Interallied Surgical Congress, to which I have already referred as a sort of Supreme Court of Surgery—a court composed of delegates designated by Great Britain, France, the United States, Italy, Japan, Portugal, Serbia and Roumania. Among these conclusions the following are specially applicable to the points in abdominal surgery to be discussed in this paper:

1. The anesthetic of choice is nitrous oxid combined with local anesthesia (anociation).

2. The best treatment of hemorrhage and shock is rest, fluids, morphia for pain, and blood transfusion.

Among the evidence offered in support of these conclusions, General Sir Anthony Bowlby presented the work of one of the most brilliant British military surgeons, Captain Douglas C. Taylor, and the work of the Chief of the Anesthetic Service of the British Army, Captain Gregory Marshall. The following statement by Captain Taylor I am privileged to quote:

"Until the summer of 1917 my colleague, Captain G. Marshall, invariably gave ether for my laparotomies for gunshot wounds of the abdomen. No series of 100 consecutive cases showed recovery rate of much over 50 %.

"During the summer and autumn of 1917 I did 101 laparotomies for abdominal wounds, and nearly half of them were given nitrous oxid and oxygen, combined with infiltration of the abdominal wall with eucain and novocain. The more serious cases, i. e., those with rapid pulse and low pressure, were nearly all done by this method.

"Of this series, 27 died at the Casualty Clearing Station and 74 were evacuated to the Base; of the latter, there have been only two deaths, both from secondary hemorrhage—one from the kidney and the other from the rectum and buttock."

That is, by the employment of anociation, Dr. Taylor's mortality rate was reduced from approximately 50 to 29 %.

Captain Marshall in turn has demonstrated that patients may apparently do well during ether anesthesia, but do badly afterward, while they do well both during and after nitrous oxid-oxygen anesthesia.

The experience on a large scale of the resuscitation teams from the Lakeside Unit which served continuously throughout Field Marshal Haig's great offensives in Flanders, in 1917, during which there were over 800,000 casualties, showed that in abdominal operations somewhat better results were obtained if, before the beginning of the operation, sufficient blood were transfused to permit a safe performance of the operation; and if again at the completion of the operation, an ample amount of blood up to 750 c. c. were given. Furthermore, if a let-down appeared later, the transfusion might be repeated. Meanwhile the advantages of comfort, rest, warmth, morphia and fluids were added.

In this unparalleled opportunity the value of these agents as the most effective means of preventing and of treating shock and of combating hemorrhage was continuously demonstrated.

PERITONITIS

After shock, the most common cause of death in the field, excepting in winter, was peritonitis. In its treatment, the following synthesis, formulated for civilian practice, representing what is perhaps the most interesting and significant application of the principle of anociation, was found equally applicable to military surgery.

The surgeon, by excision of the focus of infection, by repair of perforations or rents in the intestinal walls, by establishment of adequate drainage, by Fowler's position and assurance of physical rest, has in part fulfilled the purposes of the adaptive mechanism. Therefore, if the further tax upon the organism from the activity of the whole mechanism of defense can be obviated by abolishing the stimuli which call it into action, by so much will the vitality of the patient be conserved.

The activity of this protective mechanism is evoked by the bacterial toxins which as adequate stimuli activate associative memory. Associative memory is diminished or abolished by morphin. Emotion is abolished by morphin, as are also pain and muscular action, and in like manner and to the same degree the associative memory evoked by an abdominal infection is abolished by sufficient morphin. Just as a preliminary dose of morphin is used as an essential step in the anociated operation, so will it serve to accomplish the "peritonitis-less" abdominal infection. The value of morphin in large doses was recognized by Alonzo Clark, whose method is certainly the most effective non-surgical treatment of peritonitis. When by its use anociation of the infection is added to anociation of the operation, the most efficient surgical treatment is achieved. For the wounded soldier, in particular, who has been subjected to cold and wet and mud, to continuous worry and foreboding, to homesickness and depression, to hunger and thirst, to vermin, to noisome sights and sounds and odors, which have added to the menace of his abdominal infection, deep morphinization to conserve the narrowed margin of safety is of paramount value.

The essential points in the anociated treatment of abdominal infection, therefore, are the following:

1. Nitrous oxid-oxygen.
2. Anesthetized incision.
3. Accurate, clean-cut operation to diminish both infection and shock.
4. Adequate drainage.
5. Fowler's posture.
6. Vast hot packs over the entire abdomen spreading well down over the sides.
7. Five per cent. sodium bicarbonate, with five per cent. glucose by rectal tap, continued as long as it is tolerated.
8. Primary lavage of the stomach, repeated only if indicated. (It will rarely be indicated if anociation is complete.)
9. From 2,500 to 3,000 c. c. of normal saline subcutaneously every twenty-four hours until the period of danger is past.
10. Morphin hypodermically until the respiratory rate is reduced to from 10 to 14 per minute and held to this rate until danger is past.

Under this combination of the anociation of peritonitis with the anociated operation, my associate, Dr. W. E. Lower, and I performed 409 consecutive opera-

tions for acute appendicitis with or without generalized peritonitis without a death.

With the foregoing principles established for the prevention and treatment of shock and hemorrhage, and for the treatment of peritonitis, which are the principal causes of death in abdominal operations, let us discuss their practical application to some of the principal groups of abdominal operations.

The most difficult and critical abdominal operations, carrying the highest mortality, are those for the repair of the perforating wounds received in war. It would seem, therefore, that a technic which can deal successfully with cases in which a bullet or shell fragment has torn its way through septic material into the hollow viscera in a soldier, who usually is in a state of physical and psychic exhaustion from fighting and delay, often also from bleeding, who is always infected, should provide even greater protection to the civilian patient, in whom avenues through abdominal walls and into viscera are opened by the surgeon under the utmost aseptic precautions at a chosen time and under planned conditions.

Nevertheless, in the civil as in the military hospital, the outstanding problems of abdominal surgery, as we have already stated, are infection, shock and hemorrhage.

INFECTION

In civilian surgery the principal sources of infection are the appendix, the gallbladder, the tubes, perforating ulcers, or the infection may be incident to the operation itself.

In military surgery the source of infection may be clothing, missiles, or the contents of the hollow viscera—especially the last.

In our military experience near the front line and at a Base Hospital, we found that the defense against infection in the soldier in many instances was greater than in the average patient. The general resistance,—the vitality,—of the soldier had been increased by his training—the open-air life, wholesome diet, regular hours and physical exercise; and the muscles of the intestinal walls, like the muscles of the legs, had become larger and stronger. If the perforated hollow viscera had been closed, fresh soldiers, whose splendid general condition had not been greatly impaired at the time they were injured, rarely died of peritonitis. In the heavy winter campaigns death was due to broncho-pneumonia, shock, exhaustion, etc., rather more commonly than to peritonitis. On the other hand, soldiers wounded after a protracted and exhausting season at the front, especially if cold and wet, as was almost universally the case during the winter months, with their general resistance lowered by bodily fatigue and mental stress—such cases bore operations for penetrating abdominal wounds badly.

The acute reduction of vitality in these fatigued soldiers is comparable to the lowered vitality of civilian patients reduced by chronic disease, such, for example, as cancer of the stomach.

The prime problem of abdominal surgery, then, is the problem of the patient with lowered vitality—reduced resistance, be that patient a wounded soldier or a diseased civilian. It follows logically that the first measure is to increase the general resistance. If immediate operation is not imperative, the vitality of the patient may be increased by obvious measures—diet, fresh air, and above all rest and sleep—until a favorable condition for operation is attained.

In the soldier with perforated intestines, however, and in the starved civilian patient with partial obstruction, or with acute infection, operative measures can not be postponed. In these cases the administration per rectum of a 5 per cent. solution of soda bicarbonate with 5 per cent. glucose, and an immediate transfusion of blood, may effect a sufficient restoration for the operation, or at least for the first seance of a two-stage operation under strict anociation—nitrous oxid-oxygen analgesia, local anesthesia, and the minimum amount of manipulation required to complete the operation or in grave situations to make a sufficient anatomic adjustment to save the patient until an interim of rest and restoration have sufficiently increased his vitality to permit the performance of the second and major stage of the operation.

As for the technic of the operation, whether it be performed in one or two stages, whether it be the removal of an appendix or gall-bladder, resection of the stomach or colon, removal of tumors of the ovaries or uterus, or—in the wounded soldier—the repair of intestinal rents or perforations, every step should be under complete anociation—nitrous oxid-oxygen anesthesia or analgesia, supplemented by ether only when it is necessary to secure increased relaxation during the exploration, novocain infiltration, gentle manipulations, sharp dissection.

The routine operation performed on a good risk in the absence of infection or complication calls for but little discussion because death is rare. We shall, therefore, consider especially the grave risk.

OPERATIONS UPON THE STOMACH

Two prime factors determine the result of operations upon the stomach:

1. The state of partial starvation.
2. The degree of debility produced by the toxins of cancer and by hemorrhage.

Our researches have shown that starvation and advanced cancer produce marked intracellular changes in the brain, and it is a common experience that these two conditions are extremely unfavorable for surgical operations. Yet even in these states splendid results are secured by a strict adherence to the principles of anociation. Since our operations for resection of the stomach have been governed by these principles our mortality rate has been reduced almost 50 per cent.

The following cardinal points are to be observed in gastric operations:

1. The general condition of the patient is improved prior to operation by the administration of large quantities of sodium bicarbonate and glucose (five per cent. of each) by rectum; and if pyloric obstruction is marked, by the subcutaneous injection of much water.

2. If there is marked anemia, give an adequate transfusion of blood.

3. If the risk is extremely grave, use nitrous oxid-oxygen only to the extent of analgesia and depend mainly upon local anesthesia. If the risk is fair, proceed as usual for abdominal operations.

4. Make an ample incision so that the operation may be taken to the stomach, and the stomach not pulled out, unless it will come out easily without being pulled.

5. If there is a cancer-like mass, and the hazard is great, then at the first operation make only a gastroenterostomy; otherwise complete the operation in one seance.

6. In case of a two-stage operation, the resection may be made after the nutritional balance is well established, usually in about a week.

7. In the second operation not only will the resection be made with little disturbance, but as a result of the preliminary gastro-enterostomy there will be a strong mobilization of the elements that make up local immunity against infection in the operative field.

8. In certain cases it is impossible to differentiate cancer from ulcer by the symptoms and history, by x-ray examination, by palpation, even by the microscope. Thus in four of our cases the entire mass that at the time of the first operation — gastroenterostomy — appeared to be cancer disappeared before the second operation, so that the resection was not required. Had the entire operation been performed at the first stage not only would the hazard have been great, but a needless operation would have been performed.

9. In cases of pure cancer we have found in the second stage of the operation that the rest provided by the preliminary gastroenterostomy has reduced the size of the growth by diminishing the inflammatory tissue.

10. In the resection, if adhesions are found, divide them with a sharp knife. Make all dissections with a sharp knife.

11. Make a wide excision of the tumor.

12. Use round needles for suturing the stomach.

13. Avoid post-operative hemorrhage by using the cobbler stitch.

14. Tie the interrupted sutures lightly.

15. Should there be post-operative vomiting, use the stomach-tube promptly.

16. Usually less post-operative disturbance is caused by the second and larger operation than by the first.

17. After the resection take especial precautions to keep the patient warm, and

to keep up a good nutritional and water balance. The two-stage operation gives splendid opportunity for this because the physiologic adjustment resulting from the gastroenterostomy occurs before the resection is made.

18. Convalescence is usually secure.

19. Post-operative care of ulcer cases should be controlled for many months.

ACUTE CHOLECYSTITIS

Cases of acute cholecystitis usually can be carried over the critical stage into a chronic stage, but when operation becomes necessary, in threatening acute cases, the following plan is strikingly successful:

Under only nitrous oxid-oxygen—never supplementary ether—and with local anesthesia, the abdominal wall is divided over the very middle of the most tender, the most rigid area—not where the gall-bladder anatomically ought to be, but where the center of infection is.

The peritoneum is opened most cautiously and an attempt made to divide it wholly and only within the area of adhesion. If adhesions extend down to the distended gall-bladder, they are separated with extreme caution until the gall-bladder is reached, so that an aspirating needle may be inserted; the adhesions are separated only sufficiently to meet the absolute requirements for the establishment of drainage. As soon as the gall-bladder is opened (we are now discussing a fulminant acute case) a tube is inserted and nothing more is done surgically. Around this tube a quantity of iodoform gauze is lightly packed, after which large pieces of gauze are inserted around all the sides of the short abdominal incision. No stitches are used provided the incision is short and the gauze packing adequate. As a result the infection collapses and rapid convalescence follows. After all the acute symptoms have subsided, the temperature has remained normal, and the patient has been in good condition for a sufficiently long period, then a cholecystectomy is performed.

If conditions are favorable then of course the operation is completed in one seance.

RESECTION OF THE LARGE OR THE SMALL INTESTINES

Gangrene resulting from acute intestinal obstruction and the presence of cancer are the two conditions for the relief of which a resection of the intestines is most frequently indicated. Whatever the condition, the first step is an exploration for the purpose of planning the operation and developing the operative field.

First, an ample abdominal incision is made under complete local blocking with novocain, for whatever condition may be found, the muscles of the abdominal wall will then be relaxed; the exploration will be facilitated; and the use of gauze pads will be reduced to a minimum.

The preliminary exploration will invariably cause a certain amount of trauma in the unblocked territory, especially in the presence of intestinal obstruction. In such a case enough ether should be added to the nitrous oxid-oxygen to insure complete relaxation until the completion of the exploration and of the development of the operative field. If the general condition is poor, then a two-stage operation may be required. Moynihan's plan of dividing the peritoneal attachment of the colon is most useful, as this mobilizes the colon to a great degree, and permits easy handling with minimum manipulation.

The following are especially important points to be observed in performing an anociated resection of the intestines:

1. Use silk sutures.
2. Use round needles.
3. If there is plenty of room, close the divided ends and make a lateral anastomosis.
4. The second choice is end-to-side anastomosis.
5. The last choice is end-to-end anastomosis.
6. If anatomically feasible, protect the suture line with omentum.
7. In very grave cases perform the operation in two stages. In the first stage merely bring out the tumor, cut it away between the clamps, and establish a lateral anastomosis; complete the operation in a second stage after physiologic balance has been established.
8. Relief from obstruction is the first consideration.

9. The newer methods of controlling infection will minimize that danger.

In all cases of cancer of the rectum a two-stage operation is performed. In the first operation under anociation, the incision is so placed as to allow complete information regarding the local extent and also the dissemination of the cancer to other parts, especially to the liver. If the case is operable, a Littlewood artificial anus is made, and the operative field is surrounded with gauze lightly impregnated with iodoform. These procedures involve a light and a short operation. After the physiologic action of the artificial anus is established and the patient's condition is satisfactory, usually within four days, then the excision of the cancer is made. Since the first operation, usually under analgesia, has caused but little disturbance, the patient looks forward to the second with relative equanimity.

The surgeon, too, may anticipate the second stage with equanimity, because of the many safeguards he is able to offer, principal among which are the following:

1. The iodoform gauze mobilizes a strong defense against infection.
2. The improved methods of combating infection and promoting the healing of wounds which have been evolved in war surgery.
3. The control of shock.
4. The established, functioning anus, by which the new wound is completely protected from feces.
5. The continued, unhampered nutrition.
6. The resort to blood transfusion, if anemia, or exhaustion, or hemorrhage, wears down too much the resistance of the patient.
7. The promotion of the welfare of these cases of tardy repair by a dietetic and hygienic regimen similar to that for tuberculosis—forced feeding and fresh air in abundance.

My associate, Dr. Lower, and I have had but one death in the last thirty operations performed by the foregoing plan.

PERFORATING ABDOMINAL WOUNDS

In a desperate case in which the vitality of the patient has been greatly reduced by exposure, starvation, fatigue or hemorrhage, a transfusion of blood is first given, the abdomen opened under nitrous oxid-oxygen analgesia and local anesthesia and only the immediately essential anatomic repair made—the loop of intestine brought out of the wound—the anastomosis being postponed until the patient's reserves are sufficiently restored.

It should be emphasized, however, that the one absolute rule for the treatment of penetrating wounds of the abdomen is immediate operation — even though circumstances justify only the first stage of a two-stage operation as indicated above.

When the missile has passed through the large intestine and through the retroperitoneal area, one of the most dangerous conditions exists, because the retroperitoneal area has a very low power of resistance to infection; if this applies to the ascending or the descending colon, then after repairing the visceral injury, the incision is carried laterally to the exit tract which is excised. Carrel-Dakin tubes are inserted into the retroperitoneal space and the abdomen closed. Perforations of the stomach and of the small intestine are more readily repaired than perforations of the large intestine.

Abdominal cases should be moved as little as possible. To meet the urgent need of these cases in particular, mobile field hospital units were planned. These units, by following the lines of battle, could give immediate care to these critical cases and could retain them until they could be safely removed to the base hospital. Lieutenant-Colonel Lee in particular did notable work in field hospitals in operations on these cases.

ACUTE APPENDICITIS

In acute appendicitis we direct that the patient be propped up in bed, in the ambulance, in transit to the operating room, on the operating table, en route from the operating table to his bed, in bed until the danger of spreading infection is past—the patient sits up throughout the progress of the disease.

In these acute cases the incision is always over the center of the most tender area, always intermuscular. The peritoneal cavity is approached with the utmost care. If the abscess is localized, the

operation is ended when the abscess is opened and gently explored. If there are no adhesions and the pus is free, then, regardless of the position of the appendix, the cigarette drain is carried down to the left side of the pelvis, along the bottom of the right pelvis, continued along the parietal peritoneum, to come out at the lower end of the McBurney incision. This leads the pus from the left as well as from the right pelvis up to the opening. The Fowler position drains all free pus down into the pelvis, the cigarette drain directs the pus to a way out of the pelvis, out of the abdomen. Hence there are no residual abscesses in this territory. If there is a localized abscess, the drain is not disturbed until the entire abdomen has settled down. The acutely inflamed appendix is picked up with the utmost gentleness and tied off near the cecum—no invagination—nothing more. The cecum is left unmoved; it is not placed anywhere; it is allowed to stay where it is or to go its own way.

If there is a walled-off abscess, then the abscess is cautiously opened at its center, wherever that center is—McBurney, left, median, hypochondriac, umbilical — the abscess is opened in the center of the mass, the center of the rigid area and of the tender area. The appendix is tied and cut off wherever it is found. The cecum is not looked for—is not moved.

The common cause of secondary abscesses, pyephlebitis, and bacteremia is the opening up of absorption areas by the operation. The more careful we are, therefore, the more completely we respect Nature's defense, the fewer will be these complications.

When the patient recovers and the wound is healed—and such wounds soon heal because they have no complications—then by a clean intermuscular incision the appendix may be removed. The second operation is not indicated if necrosed portions of the appendix come away in the abscess. We have found that in the great majority of cases of acute appendicitis the appendix is removable, and in but five per cent. is a later appendectomy performed. Our statistics include 6,495 operations for appendicitis — 5,044 before the principle of anociation was evolved, with mortality rate of 3.3 per cent; 1,451 under anociation with mortality rate of 1.4 per cent.

The value of anociation in abdominal surgery has been amply demonstrated in the civilian experience of my associates and myself in the following operations in addition to those cited above:

583 operations on the intestines:
370 before anociation was employed.
217 with anociation.

574 gastroenterostomies:
207 before anociation was employed.
167 with anociation.

954 abdominal hysterectomies:
664 before anociation was employed.
290 with anociation.

In all of these the mortality rate was reduced more than 50 per cent. by the application of the principle of anociation.

The abdomen was first opened cautiously, almost breathlessly; then boldly, almost unscrupulously, and finally more safely; and it is to be hoped methods offering a still greater margin of safety will be evolved. We have learned much of diagnosis; of prognosis; of pathology; of morbid anatomy; of technic. The outstanding problem that remains is that of relating abdominal surgery to the great principles of biology. We have achieved today the impossible of yesterday; it remains to achieve tomorrow the impossible of today.

PERIPHERAL NERVE INJURIES*

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The present war has given us ample opportunity for increasing our knowledge of nerve injuries, and has provided a large number of cases for observing the accuracy of our diagnostic methods and the trying out of different modes of treatment.

When a nerve injury is suspected there

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are several points to be taken into consideration:

1. The existence of a peripheral nerve injury in contradistinction to paralysis from other causes which involve the central nervous system.

2. If peripheral nerve injury is thought to be present the location must be determined accurately. This can be done only by an accurate knowledge of the minute anatomy of the part, especially the nerve supply of the different groups of muscles and the approximate point at which they enter the muscle.

3. Whether the lesion is complete or incomplete and whether it is progressing toward recovery. The history of the case will determine to some extent whether the lesion is complete or incomplete—that is, the character of the injury, the time elapsed since its occurrence, and the relation of the time of injury and the appearance of paralysis. This latter point is frequently overlooked, especially in cases of fracture. Too often all of our attention is given to the relation of the bony fragments to each other, and too little to the relation to nerve structure, with the result that the fracture is often reduced, the whole limb encased in a permanent dressing, with no thought of a nerve injury until the dressing is removed in from three to six weeks later to find that paralysis is present in one or more groups of muscles. It is almost impossible to determine at this time whether the paralysis was caused by the original injury, the manipulation in reducing the fracture or by too tight a dressing. The nerve injury may have been produced by the original trauma, but unfortunately will be very difficult to prove should the occasion arise demanding such proof.

4. Observation.—This is, of course, the most important of all in determining the presence or absence and the extent and character of any nerve injury.

Measurement should be employed in old injuries to determine the extent of the atrophy. Examination should be made for sensory abnormality and motor impairments of the groups and muscles involved.

Electrical.—If there is a response to faradic current the lesion is not complete. If there is no response to faradic, and there is to galvanic, it is taken that the muscle fibers are still excitable. If there is no response to either, it will indicate that the process of degeneration is profound and the period of recovery will be correspondingly prolonged. Trophic disturbances, such as glossy skin, sweating or excessive dryness, may be present.

A completely severed motor peripheral nerve should be sutured as soon as consistent with the character of the injury. Early suture is worth trying even in cases suspected of being infected. In old injuries where there is an excessive amount of scar tissue there is little or no hope of success of suture of the nerve if the joints over which the paralyzed muscles pass are not rendered mobile, and the paralyzed muscles put and kept in such a condition that they will be capable of responding to the nerve stimuli when the conductivity and regeneration of the nerve is complete. So in those cases in which nerve suture is contemplated, the first step is to see that the joints involved are freely movable, the nutrition of the muscles restored by massage and electricity, the muscles kept in an absolutely relaxed condition, and the tendons not allowed to become stretched even for a short time. In many instances muscles will regain their power after prolonged relaxation in cases which have been thought to have the nerve completely severed.

In cases of stretching or severe contusion of nerves, the resulting paralysis will continue almost indefinitely unless these precautions are taken. We frequently see cases of wrist-drop or foot-drop in which no attempt has been made to give the muscles a chance to recover their function, no splint applied nor massage nor electricity used. The longer such a condition has lasted, the more prolonged will be the time of recovery. When a considerable segment of the nerve has been destroyed a good deal of space can be gained by flexing the joint over which the nerve passes. This applies especially to the knee and elbow. When apposition can not be obtained by this means bridges of nerve may be considered. The results in this have not been especially encouraging, but McKinzie reports three successful cases, and he reached the following conclusions:

1. That regeneration and recovery of

function is promoted by the use of nerve flaps.

2. That both the central and the peripheral nerve flaps can be used for such purposes.

3. That the peripheral nerve flaps by laying down a nerve path may promote regeneration over a greater gap, in one case quoted 10¾ inches.

4. That the approximation of nerves and their repair should be done in all cases as early as possible.

5. That the arrest of trophic shock can be promoted by early closure of large gaps by flaps.

6. That unimpaired nerve tissue should always be utilized for the effective repair of damaged nerves.

7. That in their repair nerves can be successfully sequestrated in muscular tissue so as to promote their regeneration and that of the muscles in which they are embedded.

8. That the principle of sequestration can be utilized in proper cases so as to avoid infected zones in wounds and also scars and other obstructions to nerve repair.

A. Barron advocates in cases requiring a bridge to repair the nerve, the operation of securing as great an approximation as possible by dissection and flexion of the joint, then securing the ends of the nerve by a silk suture, allowing the silk to bridge the gap, the joint being secured in extreme flexion, and after two weeks begin to extend the joint, making traction in the nerve ends, and at a later operation attempt an accurate approximation. He, however, does not report any successful cases.

When repair of the nerve is impossible, tendon transplantation should be tried, but due time should be given a muscle in a proper position and with proper treatment before it should be condemned. This is especially true in paralysis resulting from poliomyelitis. It must be remembered that occasionally trivial trauma may cause sufficient nerve injury to produce a temporary paralysis, either by stretching or compression and contusion, that may produce an exudate, either within or without the nerve sheath, causing enough pressure to produce loss of function of different groups of muscles. A common instance of this injury is Saturday night or Bridegroom's paralysis of the musculospiral. In nerve injuries that are not complete it is a very easy matter to free the nerve from adhesion of scar tissue or pressure of callus, and a full recovery may be expected provided the muscles involved be kept in a position of absolute relaxation and the circulation be kept up by massage and electricity. When a nerve has been completely severed for some time, the ends will frequently be found connected by fibrous tissue which will give the impression of continuity of nerve tissue. This should be thoroughly dissected away and care taken that the nerve proper is sutured. This can be determined by the use of electricity applied to the nerve by sterilized electrodes.

Hysterical paralysis and malingering may be distinguished from the real by a careful observation of the groups of muscles supplied by the supposedly injured nerve. Wrist drop is the most frequent variety of hysterical paralysis. In this the patient will retain the power of flexing the elbow, and if simulation or hysterical, if carefully observed, the supinator longus can be seen contracting. In operating on any nerve injury always make the original incision well above or below the injury to locate the nerve; then follow it toward the point of severance. This will save a great deal of time, as any one who has had much experience in these cases will testify how difficult it is to identify a nerve in scar tissue.

The following case illustrates many of the points enumerated:

J. C., Sgt., in April, 1918, fractured a humerus about its middle while throwing a baseball. This was followed by non-union, and in August an intermedularly graft was applied. When the case was seen by me one week later I observed a wrist-drop. The x-ray showed a beautiful anatomical result with the graft in excellent position. The operation had disclosed that the fragments had been prevented from uniting by periosteum and muscle being interposed between the fragments. The hand was put up in Jones' cock-up splint. Then massage was used to keep the muscles in good condition, but after two months had expired and no sign of the return of function, we decided to investigate it. An incision was made between the supinator longus and the brachialis anticus, the nerve located and in this position was about the size of a lead pencil. On following it upward it was seen to grow smaller until at the site of the fracture it

was about one-fourth its normal size. It was buried in dense scar tissue and callus. This was freed and the nerve was buried in muscle tissue and the splint replaced. This proved very uncomfortable and a short hand-piece was used which allowed his fingers to flex slightly at the metacarpo-phalangeal joint with the wrist in full extension. The treatment was continued and in about six weeks the contractile power of the extensors of the wrist began to return. This improvement continued without a corresponding improvement in the extensors of the fingers. A moulded plaster splint was applied to the dorsal surface of the forearm and hand that kept the fingers in full extension. In a short time there was complete recovery. In this case the primary paralysis was probably produced by the stretching of the nerve incident to applying the graft, and secondly, by being bound down by scar tissue and callus.

In conclusion, I desire to call attention to the following points:

1. In any peripheral paralysis, whether from injury or disease, a definite diagnosis of the nerve involved can only be made after a careful study of the nerve supply of the groups of muscles affected.

2. That there is very little hope of muscles recovering their contractile power unless they are put in an absolutely relaxed position and not allowed to become stretched even for a short time, and their nutrition be kept up by judicious use of massage and electricity.

3. When the contractile power begins to return the patient must be encouraged to exercise that power voluntarily, without ever allowing any stretching of the muscles.

4. That early suture of completely severed nerves is essential if the best results are to be procured.

5. In the search for a nerve embedded in scar tissue, always locate the nerve in the normal tissue and follow it through the abnormal tissue.

6. In injuries of the extremities always make a careful examination for nerve injury during the primary examination and before applying any permanent dressing.

BIBLIOGRAPHY

Kennedy, R.: British Journal Surgery, Vol. 6, 1918.
Gibson, A. J.: Lancet, Col. 38, 1918.
McKinzie: Surg. Gyn. and Obs., Vol. 27, 1918.
Brown, A., and Schieber, W.: Muenchen Med. Wchnschr., April 23, 1918.
Longworthy, M.: Am. J. Orth. Surg., Vol. 16, 1918.
Harris: Nerve Injury and Shock.
Jones: Military Orthhopedic Surgery.

AUTHORS' ABSTRACTS

Surgery

A Theory of the Etiology of the Toxaemia of Pregnancy with or without Convulsions. John E. Talbot, Worcester, Mass. Surgery, Gynecology and Obstetrics, Vol. 28, No. 2, February, 1919, p. 165.

Talbot points out that improper elimination by the kidneys is the crux of the whole situation in toxemia of pregnancy with or without convulsions. He believes that the symptoms of the disease are due to the retention of the physiological metabolic waste products of the developing pregnancy, which are harmful to the system if maintained. The cause of the retention or incomplete elimination of these waste products is the inhibitory effect of toxins of chronic sepsis upon the excretory functions of the kidneys. He reports a series of 97 cases in which a focus of chronic sepsis was coincident with the incidence of the disease. By this point of view the great similarity between the symptoms of chronic nephritis and the symptoms of toxemia of pregnancy, which are harmful to the system if replained. Clinically, there is very frequently evidence of the activity of these foci of sepsis just preceding, or coincident with, the onset of symptoms of toxemia of pregnancy. The absence of local symptoms can not be depended upon to rule out a focus of chronic sepsis in the teeth or tonsils.

Further Observations on Sex Gland Implantation. G. Frank Lydston, Chicago, Ill. The Journal of the American Medical Association, Vol. 72, No. 6, February 8, 1918, p. 396.

The author reports two cases in which the testes implanted (in double implantations) in one case three years and three months, and in the other nearly two years before, were still in evidence and functionating. One of these patients had passed the physical tests for the Army and had received a commission. In both cases the results were most extraordinary as to restoration of sexual power and improvement in the secondary sex characters. A number of new cases are reported by Lydston, among them a case of "cross racial" implantation of the testes of a Negro upon a white moron with remarkable results. Another case was that of a man 69 years old who showed greatly increased sexual, mental and general physical vigor after the operation. Lydston's work has long since passed the experimental stage, and he now has very well defined opinions as to the value of his method, especially in retarding senility and in restoring the usefulness of young subjects who are imperfectly developed from sexual abnormalities of a congenital character. Great improvement in subjects who have suffered the loss of the testicles seems to be a quite uniform result of the Lydston method. This means much in a hitherto hopeless and deplorable class of cases.

EYE, EAR, NOSE AND THROAT

BRONCHOSCOPIC SIDE-LIGHTS ON BRONCHOSCOPIC CASES*

By J. W. Jervey, M.D.,
Greenville, S. C.

At the 22nd Annual Meeting of the American Laryngological, Rhinological and Otological Society, held at White Sulphur Springs in May, 1916, our beloved ex-President, pioneer and teacher in the realm of peroral endoscopy presented a paper entitled "Bronchoscopic Postulates, in which were embodied his ideas of the cardinal principles which should govern the practice of peroral endoscopy. These ideas were formulated into twelve rules which we may accept as the twelve cardinal points of this particular specialty; and coming from so high an authority, it is likely that for many years they will stand out as beacon lights, flashing across the ever-widening sea of human knowledge, guiding the good ship Peroral Endoscopy on her voyages of discovery and achievement. Being oiled by the essences and juices of genius, these beacons can never grow dim, but the side-lights which the good ship must carry, and of which we are now concerned with the flashing of a few, are tended and kept alive only by the lesser talents of the toilers and moilers who work the ship along her course, and these side-lights are necessarily of far less brilliance and endurance than the beacons which mark her course. Just now, with your permission, I shall flash for your edification a few of the side-lights as they have appeared to me in a modest career of experience circumscribed by a very limited horizon.

I shall briefly recount a few cases that have occurred in my practice and will formulate the side-lights which have developed from a consideration of the cases.

Case 1.—Several years ago I was called one night, near midnight, to assist a colleague in the removal of a foreign body from the air passages of a child between two and three years of age. When I arrived upon the scene I was informed that the child had a foreign body, probably a button, in one of the bronchi, and my colleague, after more or less prolonged search, had been unable to locate it. He requested that I make an effort. A very few minutes sufficed to satisfy me that the passage of a tube of even the smallest caliber below the glottis was physically impossible, by reason of the marked swelling of the mucous lining and narrowing of the lumen of the natural passageway. I, therefore, desisted in my effort and advised my colleague to this effect. He stated that I must be mistaken; that he had had the tube in place five minutes before. I asked him if he were quite sure that he had the tube in the air passages. He replied that he was quite sure, because he had seen the tracheal rings, but he was doubly sure because as he slipped the tube into the passage his glasses had become obscured by a gust of air blown out by the child. He had called the attention of two or three other physicians who were present to this phenomenon as proof that he was in the right locality with the tube, and these attending witnesses readily corroborated his assertion. I asked how he could be sure that it was not a blast of gas from the esophagus which he had encountered, but I did not press the question. He immediately undertook to pass the tube again into the trachea, but was unable to do so in my presence, and after some minutes of vain endeavor, gave it up. I then inquired, as I should have done sooner, upon what ground the diagnosis had been made and was informed that the child had been playing with some buttons on the floor in the afternoon and was suddenly seized with an attack of coughing and pain in the chest—no more, no less. There appeared to be no record of pulse, temperature, chest sounds, general bodily functions, x-ray examination or other aids to diagnosis. I mildly expressed my astonishment and ventured a guess that something like a broncho-pneumonia

*Read at the Second Annual Meeting of the Association of American Peroral Endoscopists, Brooklyn, N. Y., June 5, 1919.

would be found. It was, and the child died within thirty-six hours.

Case 2.—In January, 1919, a little girl about twelve years old was brought to my Hospital by her attending physician in an almost cyanotic condition. The doctor informed me that the child had one or more cotton seeds in the left bronchus, the location of which he had reasoned out from the reduced respiration on that side. Upon investigation, clearly enough there was very limited respiratory movement in the left side of the chest. The history was clear. The child with others had been playing the afternoon before in a pile of cotton seed. This little girl had been covered up with the seeds in play and suddenly emerged from her covering choking and gasping, unable to get her breath. The attack subsided, but she was brought for bronchoscopic examination, as above indicated. Realizing that it was useless to try to locate a cotton seed by means of an x-ray examination, I proceeded at once to do a bronchoscopy. This was very easily accomplished, but, to my surprise, while the tube readily passed into the right bronchus, the lumen of the left bronchus was so narrowed by evident inflammatory edema that it was wholly impossible to enter it. The right bronchus was free of any obstruction or pathology so far as I could determine, and suddenly the truth dawned upon my dilatory senses. I promptly withdrew the tube and requested the physician present to auscultate and percuss the chest. With an expression of more or less dismay he did so, and advised me that the entire left lung was consolidated. The child made a nice recovery from lobar pneumonia in the usual way and time.

From these two cases the following side-lights project themselves through my mentality across the endoscopic horizon:

Don't take anybody's word for what he has or has not seen in peroral endoscopy. Be a Missourian!

Don't take anybody's word as to what area he has or has not explored in the course of endoscopic peregrinations. Look for yourself.

Don't take anybody's diagnosis of the presence of a foreign body in air passages or esophagus, no matter how clear and definite the anamnesis. Make your own diagnosis.

Case 3.—This illustrates another point. One day on entering the City Hospital I was greeted with the information that a colleague who had been working for some three-quarters of an hour or more with a bronchoscopy in the case of a child about five years old for a foreign body in a bronchus, requested my presence in the operating room, in the hope that I might be able to assist in removing the intruder. The latter was a blue glass bead about seven or eight mm. in diameter. After looking at the bead for a moment, I turned to look over the armamentarium of instruments, decided upon the one I preferred for the purpose and was about to use it when the gentleman who had been working on the case remarked that it was useless to try removal with that particular instrument, as he had just attempted for some minutes to accomplish this result with the said instrument and nothing could be done with it. However, I quickly considered that the same might well have been said concerning every instrument on the table that could pass through the tube. Consequently, I politely persisted in my course and with a good break of luck in a very few seconds the foreign body was lying on the table with the instruments.

A consideration of this incident leads me to throw out another side-light for your contemplation, viz.:

Don't decline to use a certain mechanical principle or a certain instrument just because a colleague has previously tried it in the same case and failed. Difficulty for one man is opportunity for another.

Case 4.—In May, 1918, I was called upon to do a bronchoscopy in the case of a boy of eight years of age, who had had a tack in the air passages for more than two years. X-ray examinations and clinical evidence definitely located the tack in the right bronchus, surrounded by an abscess. On passing the tube into the right bronchus, these findings were verified. There was in addition a marked stenosis above the tack in the neighborhood of the upper lobe bronchus. Without going into details of the difficulties of the case, it will suffice to say that after forty minutes' effort, and in all of which time I

could readily grasp the tack with hook or forceps, yet I found it impossible to dislodge the tack from its anchorage. Believing the case to be one of extreme difficulty, I referred it to Dr. Chevalier Jackson for operation, sending Dr. Jackkson a pleasant little note, mentioning the location of the tack in the right bronchus and briefly outlined the difficulties I had encountered. In a prompt reply in his happiest and pleasantest vein, and without mentioning my statement as to the location of the tack, he replied that he had easily located it by x-ray in the left bronchus and that he anticipated an easy extraction on the following day. I was somewhat surprised at this information, but sat steady in the boat. Two days later I received another communication from Dr. Jackson, stating that he had entered the left bronchus with the tube and to his intense surprise could not find the tack. He then had additional x-ray pictures made and finally located the tack in the intestinal tract, whence it issued per vias naturales.

Of course what happened was that my interference with the tack in the location which it had occupied for two years or more had had the effect of loosening it in its bed, and between the time that the patient left me and was first seen by Dr. Jackson he had coughed the tack up to the bifurcation and it had dropped over into the left bronchus. Then between the time that Dr. Jackson's x-ray pictures were made and the bronchoscopy, the child again coughed the tack out of place and this time got it as far as the introitus of the esophagus, whence it was then swallowed. We might term such a case a "migrating foreign body," and while I do not recall that such cases are described under this head in the text books, I think they are by no means rare. In this connection, note the following case:

Case 5.—In March, 1919, a man of 52 years inspirated a wire staple with double sharp points slightly spreading apart. He brought a sample with him just like the one he had swallowed and it measured 7/8 of an inch long, 3/8 of an inch spread of point, and the shank something over 1/16 of an inch thick. X-ray and fluoroscopic examinations made twice at an interval of two days positively demonstrated the staple in the left lower lobe bronchus, lying horizontally and pointing medially. No difficulty was experienced in performing bronchoscopy under cocaine anesthesia. The tube had to be passed practically almost its entire length to reach the location of the foreign body. The staple was so placed in the bronchial ramus that it was not visible on direct inspection of this neighborhood, except when the patient was in the act of coughing. In other words, the foreign body was so far in the branch bronchus that with the parts at rest, it did not present itself to view in the line of the main bronchus. No accuracy could therefore be had in grasping the staple. The physical difficulties were such that after a reasonable effort I decided to postpone further operation in order to think out and perfect some plan of attack. Instead of returning to me, however, the patient, much to my relief and gratification, sought the help of Dr. Jackson. The latter wrote me one of his nice letters, enclosing report of the case, detailing the operative procedures which were adopted, stating that the staple was readily located and easily withdrawn from the right bronchus and that the time of operation was all of forty seconds. I am happy to say that I have here with me a print of the x-ray in this case, positively showing the location of the staple in the left bronchus, which is evidence that this was another case of "migrating foreign body." With the fuel furnished by these last two cases, we can find a few more side-lights flashing across the sea of knowledge, to-wit:

Don't forget—to paraphrase the famous dictum of the dusky Reverend Jasper, of Virginia, in his reference to the sun—that sometimes "the foreign body do move." Like the scriptural description of man that is born of woman, it "fleeth also as a shadow and continueth not."

Don't forget that the second peroral endoscopy performed on the same patient is likely to be easier than the first and the third easier than the second. You owe it to your patient and to yourself to prove it. Therefore:

Don't be in too great a hurry to refer

your patient to a colleague for operation, even though you know he is a better man than yourself. In the words of a great American sailor, "Don't give up the ship," or the foreign body, but make the patient give it up, if you can. And lastly:

Don't—for the sake of Love, Benevolence and Charity—when a colleague refers a case to you, explaining that he has sweated over it for at least forty minutes unsuccessfully, and you send him a neatly prepared formula of your findings and operation, and everything, casually mentioning that the thing was easily located and removed by peroral endoscopy—don't, oh! don't then be tempted to pile Pelion upon Ossa with the following interesting information: "Time of operation, forty seconds"!

THE STANDARDIZATION OF TONSILLECTOMY*

By Frank Dyer Sanger, M.D.,
Baltimore, Md.

One of the most important features of the prosecution of the World War has been the process of standardization which is affecting all activities. It dominates all industry, every method of transportation. It seeks to unify laboratory technique, and various methods in medicine and surgical procedure. Its object is to eliminate waste, dispose of unessentials and so to simplify all procedures as to insure uniform results. Its influence is so strong in general surgery that it must shortly be felt in all its special branches.

The writer feels, therefore, that we have come to a time when the importance of tonsil surgery necessitates a more serious consideration of its procedure with a view of determining how tonsillectomy can best be standardized. This is the more necessary because of the importance of the tonsil operation and also because there is probably no other operation in surgery which is so far from standardization. The great flood of literature on the operation for the removal of the tonsil, the heated discussions which inevitably follow the mention of the subject in one of our society meetings, and the enormous armamentarium constantly augmenting to meet divers requirements of individual operators, call loudly for a movement toward unification which would mean simplification or standardization of procedure.

Some of us, I fear, have been so interested in developing our own particular method of tonsil removal that the magnitude of the task of removing all the tonsils that should be removed has been lost sight of. It is interesting, of course, to evolve a method all our own which will differ from the method of some one else, but the most important thing is to develop a method so simple that the great number of operators who must be equipped to do the larger task shall so perform their task as to obtain a more uniform result. It is not reasonable to suppose that uniformity of result can be accomplished by such diversity of procedure as exists today. Furthermore, our methods must conform to general surgical procedure.

Since the question of focal infection has assumed such an important position in clinical medicine, the profession has come to realize that the tonsil is the focus of greatest importance, not only on account of its frequent incidence but also because all grades of focal infection from the most virulent to the slow and more insidious varieties may result from tonsil infection. These infections give rise to a variety of clinical pictures all demanding the elimination of the focus. There are few if any operations in all surgery that are done to relieve such a variety of conditions.

It follows that the incidence of the tonsil operation, in proportion to other operations not only in the operating rooms of special hospitals but in general hospitals as well, is so great as to place it near the top of the list. The importance of tonsillectomy is further emphasized by the really wonderful results which follow when it is properly performed, as well as by the entire absence of any detrimental effect. In the child, for instance, the benefit resulting from the tonsil removal is seen almost at once. The patient is transformed. It marks an epoch in the lives of many people. It gives an impetus to

*Prepared for the Eye, Ear, Nose and Throat Section, Southern Medical Association, Asheville, N. C., Nov. 11-14, 1918, postponed one year on account of the influenza epidemic.

growth and development which is felt throughout the life of the individual. What other operation in surgery can show a better or more immediate result?

Surely because of the above-mentioned considerations, the tonsil operation occupies a high place in surgery and the profession can no longer tolerate procedures which do not comport with the dignity of its operative position. The matter has been left to the laryngologist by the general surgeon, but the general surgeon takes a keen interest in operative procedures in the specialistic fields. His position at present is that of amusement at the laryngologist's efforts to diversify the tonsil operation. It may amuse him later to simplify the operation for us if we do not do it for ourselves.

What the laryngologist needs to do apparently is to get back to certain basic principles of surgery, keeping in mind the objects in view: namely, to remove the entire tonsil without unnecessary injury to the surrounding structure, and to prevent unnecessary loss of blood at the time of operation and subsequently.

There has been a curious shifting of attitudes regarding the tonsil operation during the past few years. When it became apparent that its complete removal was necessary, operators who had previously employed some form of tonsillotome became enthusiastic advocates of sharp dissection. Many felt that the element of sharpness was most essential. One heard of sharpening the knife between patients. It was said by many that the tonsil could not be removed completely except by sharp dissection despite Nature's provision of a capsule and fascial planes. But the enthusiasm of the advocates of sharp dissection was dampened by bleeding at the time of operation and subsequently. This complication became so troublesome and was so menacing in many instances that some operators permitted their knives to become dull, while others forsook this form of dissection for a tonsillotome which differed sufficiently from the one which they had abandoned to make the change seem not exactly a return to the old method. Others adopted some form of snare, and still others possibly possessing more manipulative skill, picked up the vessels in the tonsillar fossa and tied them. Followers of this latter plan possessing less manual dexterity but more mechanical ingenuity, invented instruments to assist in ligating the vessels.

The fundamental mistake was to assume that the tonsil could not be removed by a blunter form of dissection.

Those operators who have abandoned the sharp dissection of the tonsil on account of bleeding, have found it equally feasible to remove the tonsil by blunt methods, and have discovered also that by selecting a suitable form of blunt dissection, much less damage is done to the surrounding structures, which has, as we shall see presently, an important bearing upon the subsequent comfort of the patient, the healing processes and the question of infection and deformity.

The second mistake, much more vital in importance, was to violate the broad surgical principle that it is far better to employ a method which will prevent bleeding than to create bleeding, however feasibly it can be controlled.

It is a matter of well-known physiology that the sharply-severed vessel bleeds profusely, while the less sharply severed or broken vessel bleeds very little. The general surgeon is glad to take advantage of this fact and is extremely wary of ignoring it. In any location when hemorrhage is an important consideration he uses his fingers and gauze, and ties if it is necessary, but would not think of employing a sharp method of dissection though it might be possible to tie every bleeding point.

There is very little diversity of opinion or procedure among general surgeons regarding this. Why should there be among laryngologists in dealing with the tonsil fossa? If hemorrhage be a dominant consideration,—and no one doubts it,—why not employ methods which are approved by the general surgeon, methods based upon established physiologic fact which no one tries to contradict? It is entirely possible to tie all the vessels in the tonsillar fossa, and there are operators who have become wonderfully expert in doing so, but mere expertness in applying ligatures does not induce the abdominal surgeon to employ a method requiring it, when he knows that the question of bleeding can be compassed in a much surer and simpler way. I am surer, because the

physiologic principle upon which the other method is based is much surer than the best operator and is infinitely more sure than the average operator. I say simpler, as applied to tonsillectomy, because while a few acquire the necessary skill to tie the vessels (there is always the possibility of missing one) the great majority of operators find the performance so tedious and difficult, despite the mechanical help, that a certain portion of them will never acquire it. If we are interested in the question of the removal of all the tonsils that should be removed, which must be done by the average operator rather than in the few tonsils which Drs. Smith or Jones, expert ligationists, will take out, the surer and simpler method must become part of our standard procedure. So far, we feel certain that we have the approval of the general surgeon.

We have just said that it is possible to remove the entire tonsil by blunt methods. All operators who have abandoned the sharp dissection have found this to be true. That it can be done with less damage to the surrounding structures than is inflicted by sharp dissection, has not been sufficiently insisted upon, and yet this must be true when a proper method of dissection is employed, because the success of blunt dissection depends upon the natural lines of cleavage of which the sharp dissection takes less cognizance. Not only does the sharp dissection follow less closely the natural lines of cleavage of the tonsil from its bed, but frequently nicks the constrictor muscle, which is one of the sources of bleeding. Then, too, much more injury is done to the venous plexus lining the tonsillar fossa, also a source of troublesome bleeding. The preservation of the pillars is largely a question of care by either method.

Enucleation as a method also receives the sanction of the general surgeon. He is always glad to abandon the knife when encapsulation or other anotomic conditions make it feasable to remove a tumor or structure by means of the finger or other dissector. It is obvious that injury to the surrounding structures is reduced to a minimum when natural lines of cleavage are followed. It is equally obvious that after discomfort of the patient is proportional to the injury to the surrounding structures. What is of more importance, however, is that the possibilities of infection and the local reaction which takes place in the tonsil fossa are minimized by the lessened injury.

The great surgical lesson of the present war is, that the best antiseptic is the careful and painstaking removal of all injured tissue. If this be true, it follows that in all surgery the utmost effort should be made to minimize injury to tissues not removed. What better illustration of its application does one want than a tonsillectomy in a field which can not be made surgically clean but where an antiseptic can be employed that the surgeons of the world approve?

What, therefore, are the requirements of standardization of tonsillectomy? They are, first, to reduce bleeding to a minimum by employing a blunt method of dissection. A large number of operators are convinced of the desirability of this. The number of operators who dissect sharply and tie the vessels is proportionately very small. Second, to employ a form of blunt dissection which is the most likely to follow the line of cleavage under varying conditions. The line of cleavage, when it is not obscured by adhesions, may be found by many instruments, but the difficulty is that it is rarely entirely clear, and, therefore, it is not wise to depend upon any mechanical contrivance which can not take cognizance of variations in cleavage. We must, therefore, discard all instruments incapable of following cleavage under varying conditions. There remain two methods of blunt dissection capable of taking advantage of lines of cleavage under all conditions, that is, when cleavage is clear and distinct and when it is more or less obscured. All operators know that this latter class constitutes a large proportion of cases operated upon. Either the blunt dissection must be used under the guidance of the eye or the sense of touch must be employed supplementing the eye. Certain obvious advantages accrue from the use of the sense of touch. Not only is the finger the best blunt dissector, by virtue of its bluntness, but it dissects intelligently, while all mechanical instruments cut hopefully. Its usefulness in the tonsil fossa is uninfluenced by size, shape

and depth or such variations in the fossa as modify illumination. Oozing or free bleeding do not obscure the line of cleavage to the finger. To the eye these are a constant hindrance. The finger finds cleavage by recognizing the give during the separation of tissue in the most difficult cases. Under certain circumstances the line is entirely lost to vision.

The dissection by means of the finger is in entire accord with accepted surgical procedure. It diminishes hemorrhage, injury to tissue, and consequent after-discomfort and reduces deformity and infection to a minimum. It eliminates an immense armamentarium. Its technique is so easy that it can be acquired by the average operator. It needs the greatest requirement of standardization, which is simplicity.

525 *N. Charles St.*

MASTOIDITIS WITHOUT INVOLVEMENT OF MIDDLE EAR: COMPLICATED BY MALARIA

By Louis N. West, M.D.,
Raleigh, N. C.

Mary A., age 14 years, was referred by her physician March 18, 1919. About one week previous she had noticed a swelling behind the right ear. This was painted with iodine, but with no improvement. Examination showed a hard, non-fluctuating mass behind the ear, about 1½ inches in diameter. The auricle was pushed forward and seemed to stand away from the head. The membrane tympani and external auditory canal were entirely normal; the hearing was normal; and the white blood count was 14,000. X-ray showed some bone destruction.

Operation was advised and performed the same day. On making the incision I encountered pus, and on exposing the bone a small opening was found leading into the antrum. The entire mastoid was broken down, leaving exposed both the dura and lateral sinus. The middle ear was well walled off by granulations which were not disturbed. The drum was not opened and at no time did the patient have any discharge from the ear. The wound closed in the usual manner and the patient was entirely comfortable until the third day when her temperature suddenly rose to 103.5°, with a chill. Another white blood count was made and found to be 12,000. Temperature was normal within two hours. The following day the temperature was 101°. A malaria stain was made and was found negative. Next day the temperature again rose to 103°. There was another chill and the blood smear showed malaria. Anti-malaria treatment was started and the temperaure never again rose above normal. Examination of pus from the wound showed staphylococcus. Four weeks after operation the mastoid wound was entirely healed.

This case is reported because I can find few such on record and with the malaria complication it so simulated an involvement of the sinus.

AUTHORS' ABSTRACTS

Eye, Ear, Nose and Throat

The Transmission of Infection Through the Eye. Kenneth F. Maxcy, Fort Sill, Okla. The Journal of the American Medical Association, Vol. 72, No. 9, March 1, 1919, p. 636.

It is generally accepted that many contagious diseases are transmitted from one person to another by direct droplet spray. It has been assumed that the droplets entered the nose and throat of the recipient directly. The possibility that they might gain access to the upper respiratory tract through the eye and lacrimal duct has been generally disregarded.

Various organisms have been recovered from the conjunctival sac, including streptococci, pneumococci, B. influenzae, etc. The tears have no bactericidal effect. The eyes offer a relatively large surface to the reception of droplets as compared with the small area of the nares partly protected by position and expiratory air currents and the area exposed by the mouth in talking. When the infected individual is talking (spraying), the non-infected has assumed the attitude of listener with mouth closed.

By experiment it was shown that a suspension of B. prodigiosus instilled into the conjunctival sac could be recovered from the nose in five minutes and from the back of the throat in fifteen minutes. From the naso-pharynx most of the organisms thus introduced pass downward into the esophagus and are excreted with the stool unless their biology is such that they find it possible to grow in the nose or throat.

The gauze mask prevents the entrance of droplets into the nose and mouth, but leaves the conjunctivæ openly exposed. The possibility of infecting the nose and throat even when a properly constructed gauze mask was worn was proved by experiment. The gauze mask prevents the infected individual from spraying his environment, but does not completely protect the non-infected individual from being infected with droplet spray.

The frequency with which respiratory infections begin with a conjunctivitis suggests that the eye is not an uncommon portal of entry. Certainly the possibility should be borne in mind and those in close contact with infected individuals should protect the eye by wearing a large lens glass or some similar contrivance.

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EDITORIAL DEPARTMENT

THE PASSING OF "PTOMAIN POISONING" AND "ACUTE INDIGESTION"

The mere fact of an attack of acute illness coming on soon after eating is enough to make the diagnosis of "ptomain poisoning" or "acute indigestion" clear in the mind of the average person; and, according to the newspapers, among the most frequently announced causes of sudden death are these two terms which are often used as a cloak to cover up ignorance or diagnostic uncertainty. In reality the great majority of such cases are due to organic diseases within the abdomen, in which there are symptoms referable to the stomach and intestines. Among the conditions frequently mistaken for food poisoning may be mentioned appendicitis, gastric and duodenal ulcers, gallstone colic, ruptured gall-bladder, pancreatitis, pancreatic calculi, angina pectoris, aortitis, and other thoracic and intra-abdominal diseases, in which there occur acute, severe attacks of pain, with nausea and vomiting.

The writer has been called in consultation in a number of cases of so-called "ptomain poisoning" and "acute indigestion" in which one or the other of the above conditions was the real cause of the symptoms. He recalls one tragic case of "ptomain poisoning" in which an excellent surgeon had treated the patient for several days, because he had traced his illness to eating soft shell crabs. An operation, five days after the illness began, revealed a gangrenous appendix, with general peritonitis, from which the patient died. Another case called "acute indigestion" was the first attack of angina pectoris, which came on with pain, nausea, and vomiting soon after eating. The patient died in a second similar attack. Still another case of "ptomain poisoning," supposedly from eating oysters, was one in which the patient was seen several days after a sudden attack of vomiting with pain in the epigastrium, and only a few hours before death. The autopsy showed perforation of an old gastric ulcer. An instance is recalled in which an operation for a perforating duodenal ulcer was delayed for three or four days because the patient thought he had "ptomain poisoning." Another patient who had an attack of "acute indigestion" died suddenly. The postmortem showed a thrombus in the coronary artery.

The use of the term "ptomain poisoning" should be discontinued, because it has never been proved that ptomains have anything to do with the symptoms that occur as a result of eating poisonous food. Ptomains are not found in meat until the late stages of putrefaction, when it is in such condition that no one would eat it. Experiments on many different animals have proved that ptomains, or the products of the putrefaction of meat, are but slightly toxic, if poisonous at all. Therefore, "ptomain poisoning" along with "biliousness" and "congestion," should be relegated to the medical junk heap.

It would be well if public health authorities would decline to accept reports

giving "ptomain poisoning" or "acute indigestion" as causes of illness or death. These terms are inaccurate, unscientific, and misleading. The term "food poisoning," "food infection," or "food-borne infection," should be substituted, with a qualifying clause stating the kind of food and the type of infection or poisoning, if it is known.

AMBIDEXTERITY

Custom arbitrarily causes the finger of ridicule to be pointed at the person who may be left-handed, while on the other hand it creates admiration for the one who is proficient with both hands. Why should not every one be ambidextrous? Now that America has been confronted with a near-national disaster, resulting from the European war, it seems appropriate to come forth with a second to the suggestion that ambidexterity should be encouraged in children. There is the military, civil and economic consideration in this discussion, and anything that reacts upon the future of the Nation should be of serious moment to every one.

In each phase there is a distinct loss resulting from the artificial disability imposed upon young children and later on in the adult. The centers governing the development and use of the upper extremities are identical on each hemisphere of the brain, and, therefore, it seems that if one side can be educated, through the same process both sides can be trained. Such use of both hands would be of value in the pursuance of professions, trades and arts and in the event of the loss of one or the other hand, there would not be the necessary handicap experienced during the period of disability and re-education.

There is broadcast sufficient elements in the form of disease and habits that tend to decimate the ranks of the human family. Hence, it seems that those charged with the maintenance of civilization can scarcely view this subject with indifference. Indeed, does not neglect in this respect amount to more than mere indifference? The failure to develop the use of each hand to be more than an auxiliary to the other has been termed "a physiologic mutilation," and since this error can be made to disappear at will, it is evident that there should be a more concerted action to stem the tide toward a national deficiency. In has taken the appalling tragedies of the recent war to make us realize the necessity of being a "fit" people, and as we look on with regret and sympathy at the efforts of our maimed heroes in their struggle to overcome the blights of an unkind fate, we should be spurred to the maximum degree in preparing the next generation for every eventuality.

The development of ambidexterity may be one of the new sciences, and even though there may be no more wars to cause a man to lose his good right or left arm, this departure from custom will mean much, as it has been shown that ambidexterity more than doubles the output in many of the professions and trades. Industrial accidents will doubtless always be with us.

The following plan has been advised by an eminent French military officer as a means for securing this needed reformation: (1) to appeal to the mothers to teach children the use of both hands equally well; (2) to make the use of both hands obligatory in all the primary and secondary schools; (3) to appeal to the national pride in the interest of the Nation and in the interest of the defense of the country; and (4) annually to award a prize to the teacher in the Nation (in this instance France) who has been most successful in carrying out this desirable reform.

THE ALABAMA PUBLIC HEALTH SYSTEM

When the American Medical Association was reorganized twenty-five years ago, some of the most important features of the Alabama "plan" of medical organization were adopted. This plan of medical organization which placed the Alabama State Medical Association far in advance of the medical associations of other states was conceived and accomplished by a distinguished Alabamian, Dr. Jerome Cochrane; and its adaptation to the upbuilding of the American Medical Association along broad lines should be credited to Dr. J. N. McCormack, of Kentucky, to whom the medical profession of the United States owes a debt of gratitude which has not been paid, and which can never be liquidated. Dr. McCormack visited every state in the Union and succeeded in getting the medical associations in all of them to make the county medical societies an integral part of the state organizations; so that the physician who is a member of his county medical society, by virtue of that fact is a member of his state medical association.

The delegates to the state medical association meetings, elected by the county medical societies, make up the business assembly of the state medical associations. Therefore, every doctor in each state may have a voice in the affairs of his state medical association. The feature in the Alabama "plan," making the state medical association the state board of health, has not been adopted by other states, because of objections that have been obvious to many men in Alabama who have observed the practical working of the system, and to public health officials in other states, who are keen to adopt methods that will improve their plan of organization.

At the meeting of the Alabama State Medical Association, in Mobile, on April 15, 1919, Dr. I. L. Watkins, in his presidential address,* recommended changes in the Alabama public health system which will remove the objections that have been urged. The Association adopted the report by the State Board of Censors, recommending the changes advised by Dr. Watkins. Among these changes may be mentioned: the adoption of the "model" vital statistics law that is in successful operation in many states; the substitution of the whole-time health officer, who must be a trained sanitarian, for the practicing physician who can devote only part of his time to public health work; the county medical societies cease to have public health functions, except to elect a county board of health of five members and a whole-time county health officer, who can serve only with the approval of the State Board of Health. The State Medical Association also gives up its function as the State Board of Health, 'though it continues to elect the State Committee of Health and the State Health Officer. It will be observed that by this plan all of the health functions in the municipalities, counties, and State of Alabama, are in the hands of the medical profession, except the appropriation of money, which is the real lubricant for the machinery which prevents disease.

The Alabama Public Health System as amended, in the opinion of THE JOURNAL, will be the best plan of public health organization of any state in the Union; and it is one that may serve as a model for uniform public health laws in other states. It would fit into the present organization of the county and state medical associations of any other state. We commend the study of the modified Alabama Public Health System to those interested in the prevention of diseases in other states.

THE SOUTHERN MEDICAL JOURNAL

*See page 313 of this issue.

would urge the physicians of Alabama to make a united effort to secure the legislation needed to make the changes recommended by Dr. Watkins, who no doubt had the advice and the approval of the State Health Officer, Dr. Samuel Welch, before recommending such radical changes in the present system.

The doctors of Alabama should also aid in securing the appropriation of $150,000 a year for public health work in Alabama. This is surely a modest sum for a great state to invest in the health of its citizens. One of the first acts of the Alabama Legislature at its approaching session in July should be to provide this money for public health work. The State Board of Health has not asked for a cent more than is absolutely needed. Indeed, in the opinion of THE JOURNAL, $500,000 a year would have been better than the sum requested. With a united medical profession in Alabama cordially co-operating with the very efficient State Health Officer and the county health officers, Alabama should go to the front in public health work, and at the same time save the lives of many good citizens who ought not to die of preventable diseases.

Correspondence

EDITOR:

In your editorial of the May number of THE JOURNAL there are one or two errors which I think you would like to have corrected.

1. In 1916, General Gorgas, with a commission of four other members, took six months' leave of absence—not twelve as stated—for the purpose of investigating some aspects of the yellow fever situation in the countries south of us, with a view to its elimination. This investigation included Guayaquil, the Magdalena Delta in Colombia, and several other places in that country in which yellow fever had been reported; part of the Caribbean littoral of Venezuela, and Brazil from Para south.

2. The Commission set sail June 13 and returned December 11, so he was absent during the movement of troops to the Mexican border and returned on account of the termination of his leave of absence.

Owing to the disturbed condition of transportation on account of the war, less was done during these six months than we had hoped, but work in Africa had not been contemplated during that year as, naturally, it would have involved work in belligerent territory—both British and German Africa.

The project of eliminating yellow fever from the earth is entirely feasible: given authority, money, and sanitary knowledge, although a very extensive project, it does not present great difficulties at any special place; and it has already been reduced to a very limited number of places.

General Gorgas is unquestionably the man who should direct it.

Very truly yours,

H. R. CARTER,
Assistant Surgeon-General,
U. S. Public Health Service.

U. S. Marine Hospital, Baltimore, Md.

EDITOR:

I am desirous of obtaining the present addresses of the following Alabama doctors. Will any one possessing a knowledge of their present whereabouts kindly communicate with the undersigned?

Name	Old Address
Camack, D. H.	Jasper
Garrett, J. D.	Trimble
Hilliard, C. W.	Dothan
Miller, W. T.	Albertville
McCullar, J. A.	Carbon Hill
Nuttall, H. M. (col.)	Greenville
Pugh, B. B.	Hargrove
Roan, A. M.	Bailytown
Shores, S. S., Jr.	Arkadelphia
Staples, J. D.	Camp Hugh
Taylor, S. P.	Union
Tisdale, W. C.	
Wood, J. W.	Springville
Williamson, J. S.	Piper
Thweatt, D. H.	Parrish, Rt.

DR. H. G. PERRY, *Secretary*,
Medical Association, State of Alabama,
Montgomery, Ala.

Book Reviews

New and Nonofficial Remedies, 1919, containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1919. Price, postpaid, $1.00. Pp. 388. XXIX. Chicago: American Medical Association, 1919.

The Council on Pharmacy and Chemistry of the American Medical Association has brought out in this issue those proprietary remedies that have been accepted by the Council and submitted for the consideration of the medical profession. The Council further includes a list of the newer nonofficial nonproprietary remedies that give evidence of materializing therapeutic value. As a result of the Federal Trade Commission's activities during the war the names of some of the products originally introduced into this country by German manufacturers have been changed. For instance, barbital, procain and arsphenamin having replaced veronal, novocain and salvarsan, respectively. The book deals in the discussions of various therapeutic substances, including composition, dosage, therapeutics, actions and uses. There has been a decided revision of articles dealing with digestive ferments, serums and vaccines and silver preparations. The supplement contains references to the reports of the Council on Pharmacy and Chemistry. Due to its authoritative character, this book is a therapeutic guide which should be of value to every physician.

Southern Medical News

ALABAMA

Dr. W. D. Partlow, Tuscaloosa, has succeeded Dr. J. T. Searcy as Superintendent of the Insane Hospital of the State located at Tuscaloosa. On account of advanced years, the former Superintendent has resigned and his vacancy has been filled by his assistant of the past many years.

Dr. W. S. Keister, State Director of Sanitation, has returned to Montgomery after a tour of inspection in Sumter County, where he went for the purpose of installing a sanitary unit.

Deaths

Dr. J. T. Loflin, Enterprise, died at Tulane Hospital, New Orleans, during May, following a brief illness.

Dr. G. W. Carr, Fort Deposit, died at his home May 12 after a prolonged illness.

Dr. W. H. Richardson, Clinton, aged 30, died at his home January 14 following a brief illness of influenza and pneumonia.

ARKANSAS

On April 29 the Mississippi County Medical Society held its regular monthly meeting at Blytheville.

State Health Officer C. W. Garrison and Sanitary Engineer R. E. Tarbett have recently returned from Russellville, where they instituted a survey of the premises of the Second District Agricultural School for Boys.

At a recent meeting of the Frisco Surgeons, held in Springfield, Mo., Dr. C. M. Lutterloh, of Jonesboro, was elected President of the Association.

The Arkansas State Medical Association held its annual convention in Little Rock during May. The following officers were elected for the ensuing year: President, Dr. George S. Brown, Conway; Vice-Presidents, Drs. C. E. Kitchens, DeQueen, A. L. Carmichael, Little Rock, R. E. Cooksey, Magnolia; Dr. C. P. Meriwether, Little Rock, was re-elected Secretary, and Dr. W. R. Bathurst, Little Rock, was re-elected Treasurer.

Dr. W. H. Toland, Nashville, Ark., has succeeded Dr. Isbell, of Horatio, as a member of the Board of the Fourth Congressional District.

Deaths

Dr. S. T. Tapscott, Sr., Searcy, aged 88, died at his home May 14.

FLORIDA

The Dade County Anti-Tuberculosis Association held a meeting in Miami during May, at which time the Association was addressed by R. H. Hixson, the newly appointed Executive Secretary of the Florida State Anti-Tuberculosis Association.

M. A. Ouerbach, Regional Secretary of the Anti-Tuberculosis Association, was in attendance at the State Medical Association, having come to discuss problems before the State Anti-Tuberculosis Association.

The Dade County Anti-Tuberculosis Associa-

(Continued on page 28)

DR. WILLIAM KRAUSS

Professor of Bacteriology, College of Medicine, University of Tenn.; formerly Professor of Pathology, and Pathologist to St. Joseph's and City Hospitals, and

DR. C. R. STINGILY

For eight years Director of the Laboratory of Hygiene of the Mississippi State Board of Health, at Jackson, Miss.,
have entered into a co-partnership for conducting a

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PHARMACEUTICAL & BIOLOGICAL CHEMISTS
INDIANAPOLIS

(Continued from page 344)

tion, under the direction of its Secretary, Mrs. Mary Carter, has about completed plans for the establishment of the County Tuberculosis Clinic.

The Florida State Medical Association held its forty-sixth annual convention in Miami on May 20-22. The following officers were elected: Dr. William E. Ross, Jacksonville, President; Dr. A. C. Babcock, Miami, First Vice-President; Dr. J. A. Simmons, Arcadia, Second Vice-President; and Dr. W. D. Davis, Deland, Third Vice-President.

GEORGIA

Dr. E. R. Anthony, Jr., Griffin, has been appointed to organize and head Griffin's new health department ordered by the City Commission. A laboratory will be established in the City Hall for scientific research work.

The Southeastern Sanitary Association held its annual meeting in Rome on May 12-13. Important health topics dealing with sanitation and child welfare work were discussed by the members and prominent visitors in attendance.

Dr. C. C. Sims, Macon, who has recently been discharged from the M.R.C., has resumed his practice at his former residence.

Deaths

Dr. M. J. Crockett, Sylvester, aged 74, after a prolonged illness, died at his home May 2.

KENTUCKY

The offices and officials of the Kentucky State Board of Health have been removed to Louisville, having been located at Bowling Green since 1883.

The Southwestern Medical Association held its forty-ninth annual meeting in Paducah on May 20.

County Health Officer Locke, of Maysville, has resigned his office to accept the position of State Director of the National Tuberculosis Association. He has been succeeded by Dr. J. L. Rice, New Haven, Conn., as Health Officer.

Deaths

Dr. Joseph A. Spear, aged 72, died at the home for the aged and infirm on May 14 after a short illness following an accident.

Dr. John N. Moorman, aged 82, formerly of South Carrollton, died at the home of his daughter at Cross Plains, Tex., on April 30.

Dr. Wilson was found dead in his bed at the home of his daughter at Ocala on May 24.

Dr. W. S. Clarke, Leitchfield, died at his home during May, following a prolonged illness.

LOUISIANA

Dr. Edmund Moss, New Orleans, has received his honorable discharge from the M.R.C. and will begin practice of his profession at an early date.

The Adams-Gradwohl Biological Laboratories have been established in New Orleans with headquarters in the Maison Blanche Building Annex. Dr. George B. Adams is associated with Dr. R. B. H. Gradwohl, of St. Louis, as head of the New Orleans branch.

(Continued on page 30)

Laboratories of Drs. Bunce and Landham

ATLANTA, GEORGIA

Allen H. Bunce, A.B., M.D.
Director Pathological Dept.

Jackson W. Landham, M.D.
Director X-Ray Dept.

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The X-Ray laboratory is equipped with a modern 10 Kilowatt Snook Transformer and a Single Unit Victor Table adaptable to both vertical and horizontal fluoroscopy and radiography. Both diagnostic and treatment work is done in this department personally by Dr. Landham, who was formerly associated with Dr. W. F. Manges, in Roentgenology, at the Jefferson Medical College and Hospital.

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"Men who suppress their feelings, but who feel
The painful feelings they desire to heal;
Patient in all their trials they sustain
The starts of passion, the reproach of pain;
With hearts affected, but with looks serene,
Intent they wait through all the solemn scene,
Glad if a hope should rise from Nature's strife
To aid their skill and save the lingering life;
But this must virtue's generous effort be,
And spring from nobler motives than a fee."

True to the honor of the profession be it recorded that the ethical submerges the practical, often to an extent distressing to the business mind. In "A Business Talk to Physicians" we endeavor to demonstrate a way that makes for a more satisfactory practice while preserving all salient standards of ethics.
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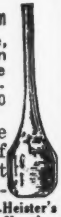

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(Continued from page 28)

Deaths

Dr. David G. Murrell, New Orleans, aged 70, died at his home during May, following a brief illness.

MISSISSIPPI

The Mississippi State Medical Association held its annual convention in Hattiesburg during May. The following were elected as officers for the next year: Dr. F. J. Underwood, Aberdeen, President; Dr. T. M. Dye, Clarksdale, Secretary; Dr. J. M. Buchanan, Treasurer. The following were elected to the State Board of Health: Dr. W. S. Leathers, Oxford; Dr. C. D. Mitchell, Jackson; Dr. T. F. Elkin, Tupelo; Dr. B. L. Crawford, Tylertown; Dr. H. M. Garrison.

Dr. C. R. Stingily, who has been director of the Laboratory of Hygiene of the Mississippi State Board of Health, has entered into a copartnership with Dr. William Krauss, Professor of Bacteriology in the College of Medicine of the University of Tennessee at Memphis. The Association is for the purpose of establishing a physicians' laboratory.

Dr. E. P. Odeneal, Gulfport, who was discharged from the M.R.C. during February, has resumed the practice of medicine at his former residence.

MISSOURI

Dr. R. B. H. Gradwohl has resumed his laboratory work in St. Louis after receiving his honorable discharge from the U. S. Navy.

At the recent meeting of the Missouri State Medical Association, Dr. N. P. Wood, of Independence, was elected President for the ensuing year.

Under the auspices of the Missouri Tuberculosis Association the Missouri Public Health Conference held its meeting in Springfield May 29 to June 1.

Deaths

Dr. Josiah Gardner, Kansas City, died suddenly at his home on May 6, following an acute heart attack.

Dr. T. A. Smith, Marshall, died at his home during May .

Dr. S. M. Evens, Poplar Bluff, died in a New Orleans hospital during May, following an operation.

NORTH CAROLINA

The Fourth District Medical Society held a most interesting meeting in Wilson during May. Important subjects were discussed and, at the conclusion of the program, the election of officers was held, the results being all officers having been re-elected. The next meeting will be held in Goldsboro during August.

Dr. A. J. Warren has been appointed by Dr. W. S. Rankin as Assistant Secretary to the State Board of Health. He was formerly Health Officer for Rowan County.

The State Board of Health has appointed Dr.

(Continued on page 32)

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It is the Improved Malted Milk of the exclusive Borden process, which combines rich cow's milk and malt ferments so as to partially predigest the protein element of the milk. This makes it a food of superior delicacy and digestibility, beneficial to all—sick, convalescent or well.

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Puffed Grains are steam-exploded grains.

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No other cooking process breaks half so many food cells as does this.

This is the ideal form in which to supply whole-grain nutrition. And the most enticing form. These bubble grains, toasted, flavory, flimsy, taste like food confections. Yet they are nothing but whole grains.

The Quaker Oats Company
Sole Makers

Puffed Wheat
Puffed Rice
Corn Puffs
All Steam-Exploded Grains
3146

(Continued from page 30)

C. W. Armstrong as Health Officer of Rowan County, succeeding Dr. A. J. Warren.

Dr. Carl V. Reynolds, Asheville, has recently been elected President of the North Carolina Medical Society and Vice-President of the North Carolina Health Officers' Association.

OKLAHOMA

The Oklahoma State Legislature, at its final session, passed the Sanatorium Bill, which provides ways and means for the Oklahoma Tuberculosis Association to make definite steps in its fight on the white plague.

The Oklahoma State Medical Association held its annual meeting in Muskogee May 20-22. At the closing session the election of officers was held with the following result: Dr. J. W. Duke, Guthrie, President; Dr. Claude Thompson, Muskogee, Secretary. The next meeting will be held in Oklahoma City in 1920.

During the State Convention a plan was inaugurated whereby a State Hospital Association was organized in conjunction with the State Medical Association. This Association will meet in conjunction with the State Medical Association each year. The officers chosen were: President, Dr. Fred S. Clinton, Tulsa; Vice-Presidents, Dr. J. A. Hatchett, El Reno; Dr. A. J. Risser, Blackwell; Secretary, Paul R. Fesler, Oklahoma City; Treasurer, Dr. Sessler Hoss, Muskogee.

SOUTH CAROLINA

Dr. H. T. Schiffley, Orangeburg, received his discharge from the M.R.C. during April.

Under the direction of Dr. R. S. Bailey, County Health Director, a Public Health Club has been formed in Springfield. The object of this organization is to aid in improvement of matters pertaining to public health.

Dr. C. M. Rakestraw, Rock Hill, has accepted a position as Surgeon in Charge of the Pryor Hospital at Chester.

Deaths

Dr. Bert Mitchell, Westminster, aged 71, died at his home during May, following a brief illness of heart trouble.

TENNESSEE

Dr. W. G. Saunders, Jackson, has resumed his practice, after receiving his honorable discharge from the M.R.C.

Dr. William Krauss, Memphis, has associated with him Dr. C. R. Stingily, formerly of Jackson, Miss., in connection with his clinical laboratory.

The Middle Tennessee Medical Association held its meeting in Columbia on May 17-19. Dr. J. Witherspoon, Nashville, was elected President of the Association for the next six months; Dr. George Williamson, Columbia, was chosen Vice-President, and Dr. Milton Tharp, Nashville, was

(Continued on page 34)

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The medical profession will be pleased to learn that in one of our largest medical centers, **New Orleans, Louisiana**, a new diagnostic Laboratory has been established. It will be known as the ADAMS-GRADWOHL BIOLOGICAL LABORATORIES. Its Directors are Dr. Geo. B. Adams, Pathologist to the Charity Hospital, New Orleans, and Dr. R. B. H. Gradwohl, formerly Lieutenant Commander, Medical Corps, U. S. N. R. F., and Director of the Gradwohl Biological Laboratories and the Pasteur Institute of St. Louis. The combined methods which are used in the St. Louis laboratories and those worked out by Dr. Adams in his New Orleans service at the Charity Hospital, will be utilized in passing on specimens for diagnosis. For instance, in the test for syphilis, we will use here the Wassermann, the Hecht-Gradwohl and the Tschernogubow Technics. The Fee for these three Tests will be **$5.00.** All other laboratory tests for moderate fees. Pasteur Treatment by Mail. Blood Chemical Methods as per Free Booklet on Demand. Write for Containers and Literature.

Send your Specimens to the Nearest Laboratory, New Orleans or St. Louis.

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to less than one-third their usual mortality and duration.

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G. H. SHERMAN, M.D.
Detroit, Mich. U.S.A.

(Continued from page 32)

re-elected Secretary-Treasurer. The next meeting will be held in Louisville during November.

The West Tennessee Medical and Surgical Association met at Dyersburg May 28-30. Dr. W. A. Evans, Chicago, was the principal out-of-town guest and delivered an excellent address to the Association. At the close of the session the election of officers was held, and Dr. J. D. Brewer, Newbern, was elected President; Dr. H. W. Qualls, Union City, Vice-President; Dr. McSwain was re-elected Secretary. The Convention was closed after a picnic dinner had been served to the members.

TEXAS

Dr. C. B. Young, Jr., Houston, received his discharge from the M.R.C. May 1.

The North Texas Medical Association held its postponed meeting in Dallas during May. This convention was scheduled to have been held last December but, due to the influenza epidemic, it was called off.

The State Medical Association held its annual convention in Waco May 13-15. The officers elected for the ensuing year were: President, Dr. T. T. Jackson, San Antonio; Vice-Presidents, Drs. Martin E. Tabor, Dallas, George H. Lee, Galveston, W. L. Crosthwaite, Waco; Recording Secretary, Dr. Holman Taylor, Fort Worth; Treasurer, Dr. W. L. Allison, Fort Worth. Houston was selected for the 1920 convention.

The Texas Railway Surgeons' Association held a joint session with the Texas Roentgen-Ray Society in Waco during May. Officers of the Surgeons' Association were: President, Dr. Bacon Saunders, Fort Worth; Vice-President, Dr. C. S. Venable, San Antonio; Secretary-Treasurer, Dr. G. H. Reed, Beaumont. The officers of the Roentgen-Ray Society were: President, Dr. J. W. Torbett, Marlin; Vice-President, Dr. B. T. Vanzant, Houston; Secretary-Treasurer, Dr. S. D. Whitten, Greenville. The Roentgen-Ray Society will meet in New Orleans with the Louisiana Roentgen-Ray Society during January, 1920.

For the first time since the beginning of the war, the Dallas County Medical Society held its monthly clinic on May 6. It is the policy of this Society to hold these clinics as was the custom in the past.

The presence of a number of cases of infantile paralysis occurring in Houston recently caused some uneasiness, but Dr. M. E. Parker, of the Texas State Board of Health, announces that the situation is well in hand.

On May 20 the Collin and Hunt County Medical Societies held a joint session at Farmersville.

Deaths

Dr. W. H. Beazley, Houston, died at his home May 18, following a brief illness.

Dr. W. J. Hildebrand, Gonzales, aged 46, died at his home during May, following a brief attack of pneumonia.

Dr. Frank Litten, Austin, aged 50, was found dead in the mountains northwest of Austin on May 16.

(Continued on page 36)

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(Continued from page 34)

VIRGINIA

The Alumni Association of the Medical College of Virginia held its annual meeting in Richmond on June 16. The meeting was addressed by Dr. Stuart McGuire.

At a recent meeting of the Medical Society of Northern Virginia the following officers were elected: President, Dr. S. B. Moore, Alexandria; Vice-Presidents, Drs. H. A. T. Leman and Ferguson Clifton; Secretary, Dr. W. P. Davis; Corresponding Secretary, Dr. Joseph Rogers; Treasurer, Dr. Robert Lamb.

Dr. H. R. Drewry, recently discharged from the M.R.C., has returned to Norfolk, where he has resumed the practice of his profession.

Deaths

Dr. John Edwin Phillips, Suffolk, died at the Norfolk Protestant Hospital on May 31, following a protracted illness of many months.

WEST VIRGINIA

At the election of officers held by the Ohio County Medical Society that met in Wheeling during May, the following were chosen: President, Dr. R. M. Hall; Vice-President, Dr. M. B. Williams; Secretary, Dr. C. H. Clovis; Treasurer, Dr. Arthur Hoge.

The West Virginia State Medical Association held its annual session in Clarksburg May 20-22. Dr. H. R. Johnson, Fairmont, was chosen President of the Association for the next year. Other officers are: Vice-Presidents, Dr. D. F. Shuttleworth, Clarksburg; Dr. W. E. Vest, Huntington; Dr. J. L. Miller, Thomas; Dr. J. Howard Anderson, Marytown, was re-elected Secretary; Dr. H. G. Nicholson, Charleston, was re-elected Treasurer.

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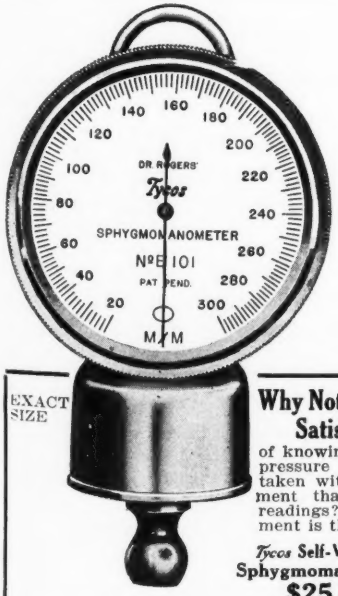

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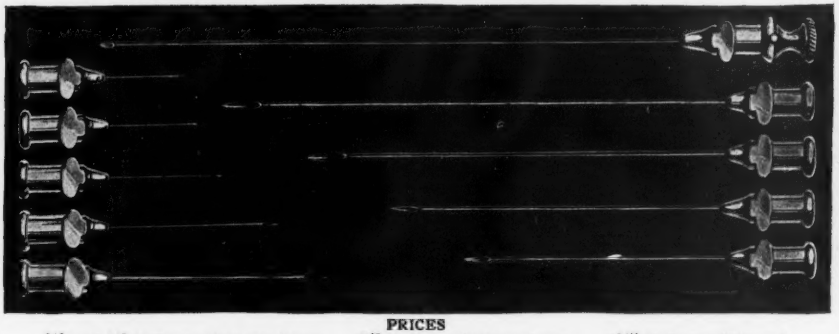

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*United States Public Health Bulletin No. 69, May, 1915.

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